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His little hands hold the instrument tightly; his small, confident voice speaks eagerly into the mouthpiece. And as simply as that, he talks to his friend who lives around the corner, or to his Granny in a distant city . . . achievements which, not so many years ago, would have seemed miraculous.

These miracles he takes as a matter of course, in the stride of his carefree days. You yourself probably accept the telephone just as casually. Seldom do you realize what extraordinary powers it gives you. You

use it daily for a dozen different purposes. For friendly chats. For business calls. To save steps, time and trouble. To be many places, do many things, visit many people, without so much as moving from the living room of your home or the desk in your office.

At this very moment, somewhere, your voice would be the most welcome music in the world. Some one would find happiness in knowing where you are and how you are.

Some one would say gratefully, sincerely—"I was wishing you'd call."

From among more than seventeen million telephones in this country, the very one you want will be connected quickly and efficiently with the telephone in your home or office.

Your telephone is the modern miracle which permits you to range where you will—talk with whom you will. It is yours to use at any hour of the day or night.

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AMERICAN TELEPHONE  
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Indexed  
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# AMERICAN FORESTS

OVID BUTLER, Editor

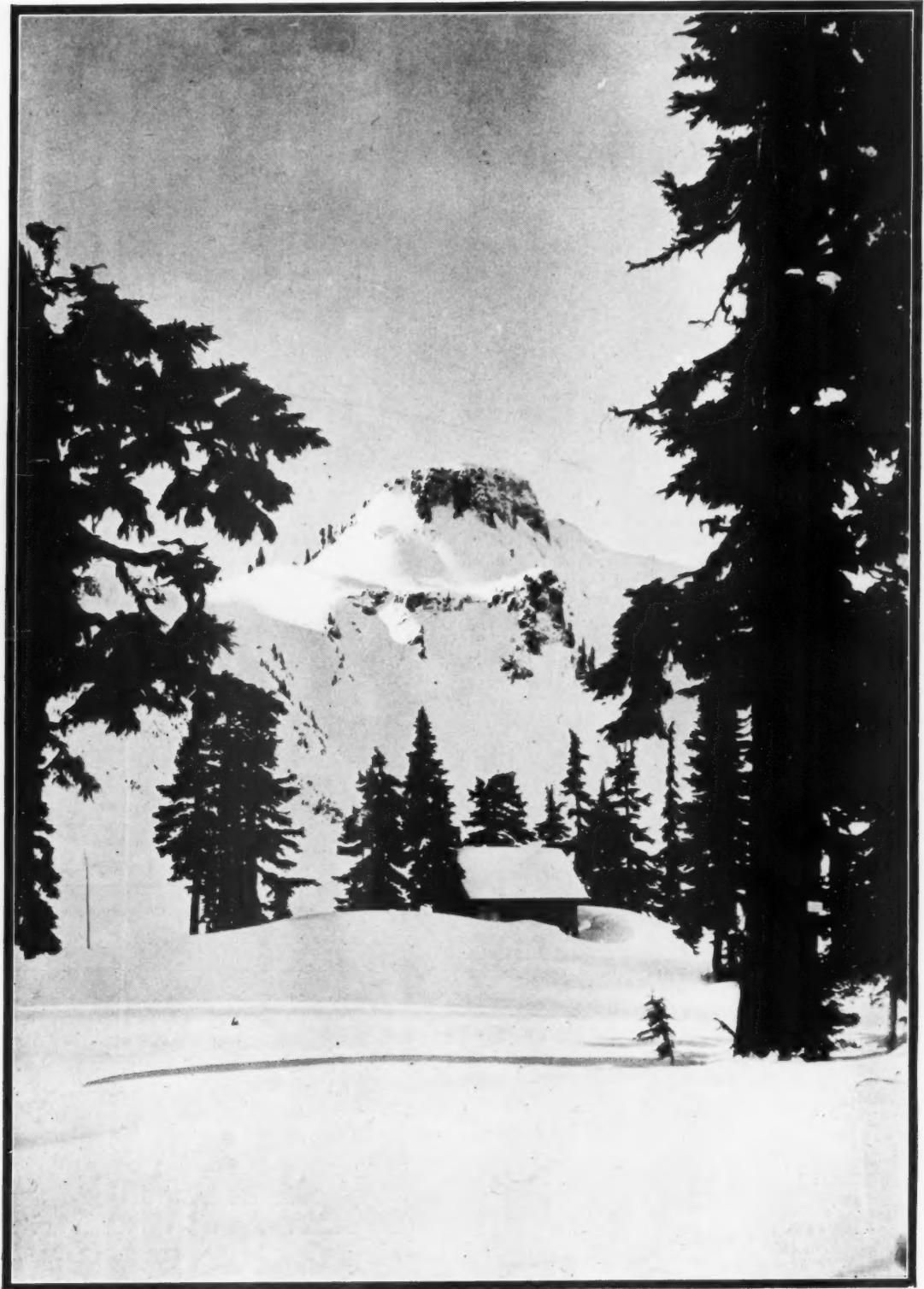
L. M. CROMELIN and ERLE KAUFFMAN, Assistant Editors

## CONTENTS FOR FEBRUARY 1933

THE COVER Pine Vista <i>Photograph by JOHN KABEL</i>	
CALIFORNIA'S UNEMPLOYMENT FOREST CAMPS <i>By WINFIELD SCOTT</i>	51
THE WOODED WAY TO MOUNT VERNON <i>By ERLE KAUFFMAN</i>	55
RADIO FOR THE FIRE LINE <i>By STEWART H. HOLBROOK</i>	59
EDITORIAL—The Grazing Issue Again	62
TREE EMIGRANTS <i>By DAREL McCONKEY</i>	63
PRISONERS IN THE FOREST <i>By ERNEST GONZENBACH</i>	67
FORESTRY LOOKS UP IN THE SOUTHWEST <i>By G. A. PEARSON</i>	69
LINCOLN—THE HOOISER WOODSMAN <i>By LOUIS A. WARREN</i>	72
TRAIL RIDERS OF THE NATIONAL FORESTS	74
A MONTH'S WORK FOR TWO MILLION MEN	76
THROUGH THE LENS <i>Price Winning Amateur Photographs</i>	77
A FOREST PAGE FOR BOYS AND GIRLS <i>Conducted by WAKELIN McNEEL</i> "What Twig Is This?"	78
FAMOUS TREES EVERY BOY AND GIRL SHOULD KNOW—The Logan Elm	79
AMERICAN ELM—(Tree Series)	80
AROUND THE STATES	82
BOOK REVIEWS	88
AMONG THE CURRENT PUBLICATIONS	89
ASK THE FORESTER	92
"WHO'S WHO" AMONG OUR AUTHORS	96

PUBLISHED MONTHLY  
1727 K STREET • WASHINGTON, D. C.  
35c A COPY • • • FOUR DOLLARS A YEAR

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Photograph by Ralph Cooke

**"A Forest Camp in Winter"**

*A prize winning picture in the Association's Photographic Contest for Amateurs.*

# AMERICAN FORESTS

Vol. 39

FEBRUARY, 1933

No. 2

## California's Unemployment Forest Camps

WHERE 7,000 JOBLESS MEN THIS WINTER ARE EARNING FOOD, SHELTER AND CLOTHES BY FOREST PROTECTION AND IMPROVEMENT WORK

By WINFIELD SCOTT

THE forests of California will feed, shelter and clothe 7,000 itinerant jobless men this winter. Already several thousand are provided for, with their number increasing daily. At the recruiting stations in San Francisco and Los Angeles there are scenes reminiscent of enlistment days of the World War as lines of men await examination by forest and medical officers. Those accepted are hurried away in trucks to the forest encampment, while the rejected ones, those failing to meet physical requirements, turn saddened faces toward other sources of maintaining life.

For only able-bodied men, and men willing to work, go to these forest camps, maintained by the State of California. They go to build firebreaks and fire trails, to plant trees, to improve timber stands. They receive no money for their work, but they are fed, sheltered, clothed, given medical and dental attention, and supplied with tobacco. Most of all they are given a renewal of mental and physical vigor by life in the outdoors. Their ranks are for the most part made up of men of rather high caliber—men who prefer to work for

their board and clothes rather than accept charity. An unusually small percentage are of the laborer class, the remainder representing practically every ordinary trade and calling, with a good share of specialized ones.

California will maintain fifty or more camps for its winter legion of jobless men. Last winter the State expended \$110,000 maintaining these forest relief camps, with such benefits, both to the permanent population and to the forest resources, that expenditures this winter will be even greater if necessary.

In the fall of 1931, when the State was struggling with the question of feeding and housing many of its own people, disturbing news came from the railroads. Counts indicated that about 1,200 men poured into the State every day—all of them jobless with little prospect of work, some of them flat broke, and the others with unknown but certainly scanty resources at best. Some alarmed gentlemen living in Los Angeles asked that the National Guard be called into service, with forces stationed at the borders of the State to turn back



Earning their board. A crew of the "jobless legion" in California burning off a ridge firebreak for greater forest protection. In the ranks of the workers may be found men from almost every walk of life—bankers, farmers, aviators, civil engineers, florists, students, chemists and fishermen.

# HERE AND THERE IN THE CALIFORNIA FOREST WORK CAMPS



The old construction camp utilized in the development of the Hetch Hetchy water project for the City of San Francisco, rises again to house California's forest workers.



Men who prefer to work for their board and clothing rather than accept charity—members of a forest work camp. For six hours' work a day in forest improvement, they receive food, shelter, clothing, tobacco, and necessary medical attention.

A tent city of forest workers in southern California. Elsewhere the men live in school houses, old logging camps, abandoned mining and resort buildings, and in one case a pioneer hotel.





Building protection roads on a watershed area. More than fifty camps will be maintained this winter in southern California and in the Sierras which will afford work for similar crews of the unemployed on a sustenance basis. They will build firebreaks, trails, plant trees and engage in other forest improvement and protection activities.

all side-door and penniless tourists. Governor James Rolph, Jr., who had appointed a Special Committee on Labor Camps, with many of the members engaged in some line of forest endeavor, did not respond to that call. His Committee, after meeting and deciding on a general policy, was allotted \$110,000 from State funds to put those men to work on a sustenance basis. The first State camp was opened December 1, 1931, three days after Governor Rolph approved the general plans.

Within a brief period of time the effect on the westbound hegira of the jobless was surprising. Ten days after the Committee organized, their number contracted from 1,200 to 600 a day; two weeks later it had diminished to 300 a day. Not many days later, the eastbound "travel" equalled the westbound. By the middle of January, 1932, more able-bodied men could have found refuge in the camps than were obtainable in southern California. Thus the first cardinal object of the camps was attained.

The second aim was to care for worthy outsiders who would work, and at the same time to prevent

experiences elsewhere. Most of the "camps" in southern California were really camps in the sense that the public understands the term—that is to say they were really camps of tents. But better housing than that seemed necessary in the northern foothills of the Sierra Nevada, and in the north coastal region. Two of the camps were barracks built outright, using the cheapest lumber to be found in a lumber producing district. Old logging camps, a summer resort, two former construction camps used by the City of San Francisco on the Hetch Hetchy water project, a pioneer hotel, a school house, abandoned mining buildings, a Salvation Army summer camp, even a "dude" ranch were used—any-

competition with home folks who were out of employment; and to lessen calls for relief on agencies provided by cities, towns and counties primarily to provide for their own people. This aim was fairly well achieved. San Francisco's Community Kitchen records show that in December, 1931, sixty per cent of the men fed were non-residents; by February, 1932, the proportion was only sixteen per cent. This tells the story of ex-



In most cases the physical and mental condition of the forest workers is greatly improved by wholesome food, cleanliness, and outdoor work and recreation. Here, after working hours, a ball game is in progress, for "all work and no play" continues to make Jack "a dull boy."

thing that met requirements as to location and could be furnished up and made habitable and sanitary at a low cost. First and last about \$11,600 was spent in repairs and in providing the facilities that all camps must have.

What character of men went to the camps? Did they really work? What were the tangible results of the experiment?

The men were recruited in the larger cities and towns. They were able-bodied because to undertake such employment they had to be. They were transported from the recruiting places to the camps by the form of transportation most convenient. They were deloused. Their quarters and food were the same as provided for the Federal and State forest officials and others who constituted the superintendence. If they had insufficient clothing, it was provided; if medicinal or dental attention was needed, it was theirs. They were supposed to work six hours a day. In point of fact, the average time of actual labor in the field was about four hours a day. Transportation from camps to the scene of work and return to the camps accounts for the difference between supposition and fact as to hours.

For a total expenditure of \$109,982 the State of California received 200,399 man-hours of work at a cost of fifty-five cents a day—and that covers every cost, except supervision. It includes establishment, transportation, equipment, food and even the food supplied to the superintendents. The men built 504 miles of firebreaks and roads, and performed a large amount of incidental brushing and other fire prevention activities. At one time as many as 2,700 men were accommodated in the twenty-eight forestry camps. Two Highway Department camps operated on a similar basis cared for another 600 men.

Because the existence of the camps discouraged the westward migration of confirmed work-avoiding hoboes, there was actually a lessening of minor crime in California throughout the winter season. Records of many of the county jails show a decrease in population for that period. Most surprising was the change in attitude towards the camps by dwellers in towns and hamlets and on ranches within reaching distance of the camps. The initial impulse of many citizens was to protest the establishment of camps in the vicinity of their homes. Their fears were groundless. No untoward circumstances marred the history of the camps. The same people who objected to the camps in 1931 asked for them in 1932.

Underlying the good record of the campers is the fact that the campers were not such by choice but through sheer necessity. Collectively it was a really worthy bunch of men. One of the cook helpers at one of the camps was a scion of the Russian Royalty that was, prior to the advent of Lenin and Trotsky. The roster of men in the camps shows some unexpected occupations. There was a landscape gardener on the list, an aviator, an apiarist, some chemists, a clothing cutter, sailors, students, fishermen, civil engineers, a florist, a trapper and even a solitary bus boy. No restrictions were placed on admission other than that the applicant must be able-bodied and free from contagious disease. There were no other requirements except that everybody must work and must abide by the simple camp rules. Neither was there any provision as to the time that a man must stay. Some of them remained from beginning to end. As a body their physical and mental status was much improved by their regime of good food, work outdoors and cleanliness. Their morale was unbroken by their experiences.

So many men cannot be assembled without much of the unexpected and human coming to the surface.

At camps located in the old gold mining regions, many men spent their late afternoons and Sundays in panning for gold. They recovered some dust and one man found an \$18 nugget. Some of them, it was learned later, remained in the gold country and continued operations at the old washings.

At the Pinehurst Camp some of the men found outside work by shoveling snow from the roofs of the cabins in General Grant National Park.

The dining room of the Bear Valley Camp was located in what was once a saloon in the days of "forty-nine." Men explored the ground under the floor and were rewarded by finding several old gold coins and one bottle of beer. At another camp a former Army captain, holding a transport pilot's license, drove a truck.

Two close companions in another camp held decorations for bravery in action in the World War. One decoration came from the Kaiser, and the other from the United States. No acrimony ever developed. At still another camp one of the truck drivers was paid \$5 for towing a privately owned automobile out of a ditch, and another man earned \$2 for cutting wood for a storekeeper. In both instances the money promptly went into the "camp kitty" for the mess.

All sorts of expedients became imperative in handling clothing. At times it became somewhat baffling to provide clothing for men of unusual size. One man wanted a fifty-four-inch undershirt; another wanted fifty-two-inch-waist working breeches. Another must have fourteen-triple-E shoes.

Vermilion infestation was prevented by sharp action. De-lousers were improvised with the materials at hand. These ranged from old-fashioned wash boilers to separate air tight cabins which could be used as air chambers.

To have located, equipped, manned and supplied so many camps in an astonishingly short period of time, and to have provided work for everybody, was in itself an achievement of organizing ability without parallel, perhaps in the history of California. The State had the willing cooperation of the United States and State Forest Services, and county and city officials generally.

Some of the experience stories of S. R. Black, Manager of the California Forest Protective Association, who was in charge of the project, provide side lights on the humanities rather than the material things that developed at the camps.

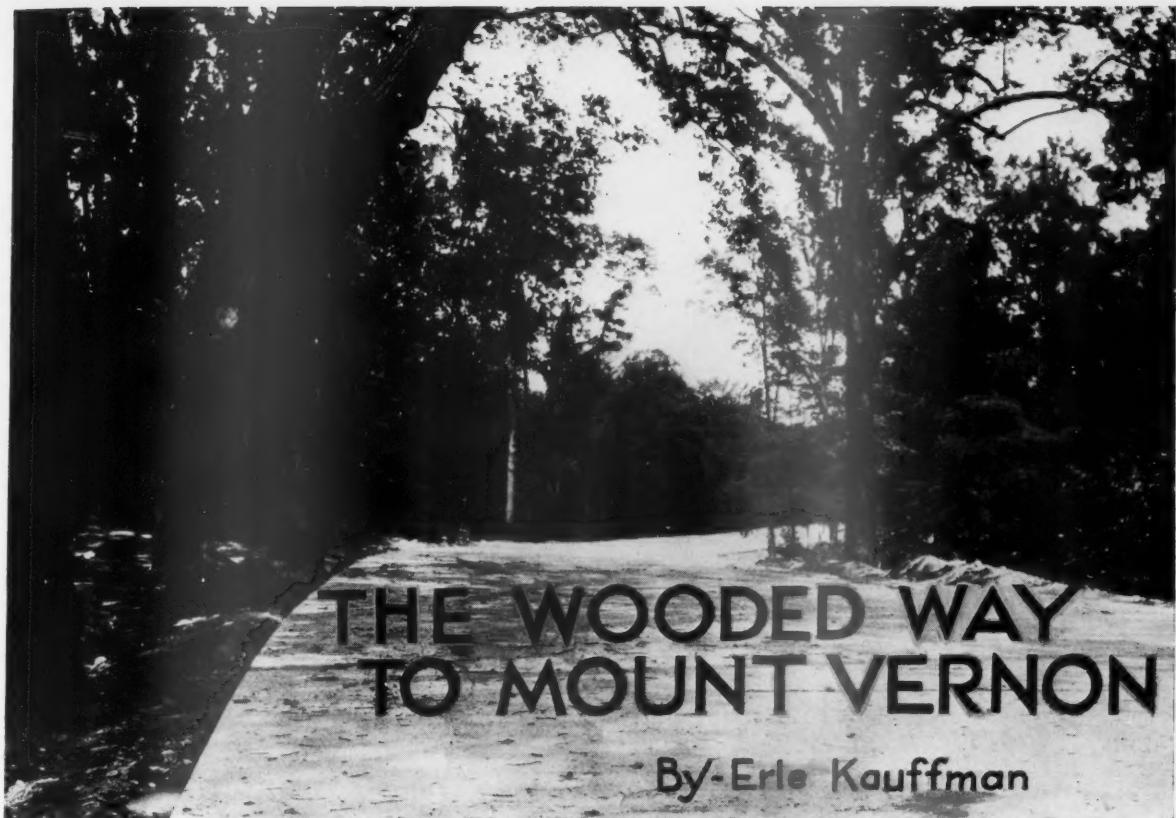
"A middle aged man came to me while I was looking over a new camp the day after it was opened," he relates. "'Mister,' he said, 'last night was the first night for over three months that I have slept in a bed. To be here, with good grub and a warm and dry bed is a God-send.'

"This came from the lips of a negro: 'Mister Boss, if you all would pay me ten cents a day, I'd stay here for the rest of my life.'

"About ten o'clock one night I met a food supply truck which had stopped about an hour's drive from a camp. It was snowing, and the road was both slushy and muddy. The truck driver, one of the unemployed, hailed the car in which my party was riding and asked at once if we had a flashlight. He did this before he recognized any of us. He wanted the flashlight to see if a tire he had put on a wheel after dark was properly lined up with the rim. That man, you see, was taking care of the truck as well as if he were paid high wages.

Since the camps were established in the winter of 1931-1932 there has come to the State authorities a rather steady call for information as to the "labor turn-over" of such camps—where men work for their board and clothes only. Such inquiries come all the way from Massachusetts westward. Experience shows that about half of all men sent to the camps and who remain for two weeks will stay until the camping season is over. The other half will wander off. So there is a steady but always lessening recruiting campaign.

It is too early to gauge definitely whether or not the publicity given the forest work camps will thin the ranks of the westbound jobless army this winter. Hundreds apply at the recruiting stations every day, and have since the camps were opened after the first heavy rains and snows. The character of the men this year is about the same as last year—men who would rather work for food and shelter than appeal to charity.



The Memorial Highway Leading from the National Capital to the Home of Washington,  
Exemplifies the Important Part Roadside Forestry Can Play in Moulding  
Fitting Approaches to Great Shrines

OME day—and that day is not far away—fifteen and one-half miles of roadway skirting the Potomac River in historic Virginia will be serving the spiritual need of man to a degree little realized in this period of weary longings. For this ribbon of concrete, like a new thread drawn through an old tapestry, must mellow in time so that the beauty it preserves may color it with its own tradition.

Some day this roadway, the Mount Vernon Memorial Highway, linking America's most cherished shrine with the National Capital, will lure more visitors than any other roadway of equal length in the world. Millions will travel its smooth surface to uncover their heads before the tomb of Washington, and many millions will seek it for its scenic beauty and for the beauty of nature it preserves.

For therein lies the story of this memorial area. Understanding hands have fashioned a virtual Eden by the simple process of correcting the mistakes of hands lacking in understanding, and for the most part by utilizing the remnants of a woodland glory that has suffered through years of abuse. The final effect is simplicity at its height, and few who drive the winding ribbon of roadway, who follow the shady trails, either afoot or on horseback, can conceive the minuteness and perfection of detail which man and a woodland remnant have moulded.

In brief, the 200-foot wide right-of-way the road traverses from the Arlington Memorial Bridge to the gates of Mount

Vernon, and the government-owned waterfront areas adjoining it, reveal one of the outstanding American examples of forest improvement to the end of civic betterment and spiritual enjoyment. When the project in its entirety is properly analyzed and fair consideration is given its function of public education and appreciation, it is safe to say that few areas in the world can excel it.

To this must be added a historical background that is as sacred as the tradition of the nation. The once virgin woodlands and fertile fields of Washington, of the Custis family, of the Lees, of the Lears are traversed by the roadway. In still earlier days a portion of the area was part of the vast domain of Lord Fairfax.

Although the Federal Government in May, 1928, authorized the United States Commission for the Celebration of the Two Hundredth Anniversary of the Birth of George Washington to take steps necessary to construct the highway, there was a movement afoot to build the road as early as 1886. Any number of surveys were made and various routes were considered but none were decided upon because of the failure of Congress to authorize construction and to appropriate the necessary funds.

When, however, the authorization and funds were finally provided, the United States Department of Agriculture through the Bureau of Public Roads was assigned the task of design and construction. Immediately new surveys were



History and legend abound in the old woodlands that lead to Mount Vernon, and both have been strictly maintained in improving and restoring their beauty along the memorial highway. The crooked old tree in the foreground, not more than a stone's throw from the Mansion, was a favorite meeting place, so legend relates, of the Indians.

made, and the location along the banks of the Potomac and through the woodland slopes so rich in tradition was decided upon, not alone from an engineering standpoint, for the route called for miles of hydraulic fills through the swamp lands of the river between Washington and Alexandria, but because the route held greater scenic advantages and offered superior possibilities for the development of a parkway.

In other words, along the river route there were trees—without a doubt the most important factor in the development of the area as a spiritual need. Not all the way to be sure, for the ax, fire and disease had taken their measure through the years. But there were enough, if wisely utilized, to partially restore the woodland glory and the inspiring vistas that undoubtedly helped mould the tree loving natures of Washington, of Lee, and of Custis. Today, with the project practically completed, or the highway part of it, at least eighty per cent of its beauty is represented in trees.

Just how this was achieved is a remarkable study in forest improvement and tree landscaping. Its conception and execution is credited to Wilbur H. Simonson, senior landscape architect for the Bureau of Public Roads. But more than that, Mr. Simon-

son succeeded in gaining the fullest cooperation of the men who built the road—the engineers, the drillers, the teamsters, the laborers—and instilling in them an appreciation of the tree in the landscape, of forest improvement along selective lines, that will have its influence wherever these men break ground in the future. That other engineers, other road builders will be so instilled, so instructed, is difficult to say. But the fact remains that within this area is a great classroom where both esthetic and scientific natures may broaden and refine.

Under the plan of development the landscape work was listed as Unit 6—the last work to be done. Actually, however, the greater part of it began with the surveys, and by the time the roadbed was down there remained only the planting of roadside grasses, shrubs and smaller trees. In fact, the final line of the right-of-way was in

many places determined by the location of woodland, even individual trees. The conception of the roadway was material, the natural setting spiritual, and the memorial character of the project had to be achieved by a perfect blending of the two.

The plan of forest improvement, carried out along the lines of approved conservation methods, was toward two ends—to



Individual tree beauty, along with woodland beauty, has been developed with great care. This old tree, between Washington and Alexandria, exquisitely frames the George Washington National Masonic Memorial in the distance—just one of the many unusual vistas along the highway.

improve the existing woodlands by selective removals and to restore woodland and tree beauty at strategic points, as overlooks, river views, and landscape vistas. The real task, however, was to achieve this for immediate results. The Bicentennial of George Washington would lure thousands of people from every section of the country—visitors with an eye for old beauty, not new—and the roadside, the overlooks, the vistas, must furnish the atmosphere of age that belonged to the land. This

was achieved in a truly remarkable manner by attention to little things, the perfection of detail in the landscape. For instance, before the ground was broken, a careful survey was made to determine the types of trees and shrubs that dominated each area. When restoration began, this native tree classification was utilized wherever possible with the result that even the most observant visitor driving over the roadway the atmosphere is that of natural growth in age. In areas where scattered remnants of dogwood were all that remained of a once beautiful woodland countryside, thousands of this blossoming and berrying species were set out to revivify the old picture.

Before construction began, practically every tree in the right-of-way was examined and marked for removal or improvement. No tree was destroyed unless so marked by the landscape engineers. Good specimens, however, were never destroyed, but were lifted with heavy balls of earth by means of the Hicks canvas, and a specially designed light winch truck, and transported for replanting at designated areas—perhaps to frame a view, to shade an overlook, or to carry out the general appearance of the roadside where trees had vanished. In these roadside plantings, by careful planning, allowance was made for future widening of the pavement, so

that there will be no necessity for future damage or removals.

Mature trees, where it was absolutely essential to remove them for construction work, and trees unhealthy from disease, insects, or fire, were felled, and their wood, when possible, utilized for the railing and other details along the finished highway. Of the remaining trees suffering cavities from fire or other sources, the landscape architects resorted to surgery work without filling. It was pointed out that about

ninety per cent of the trees within the right-of-way and park areas were fire scarred, due undoubtedly to brush fires which have been allowed from year to year to burn over these woodlands. In fact, "Abingdon," the old home of Nellie Custis, George Washington's adopted daughter, was destroyed only two years ago by a fire originating from burning brush.

Salvaging trees which otherwise would have been felled under the press of construction is one of the most outstanding phases of the project, and something new in conservation where trees are concerned. So thoroughly was this scheme engineered that the percentage of tree importations was



Department of Public Buildings and Public Grounds

Through woodlands that helped mould the tree loving nature of Washington the highway winds, revealing one of the outstanding American examples of forest improvement to the end of civic betterment and spiritual enjoyment.

very low and confined chiefly to the areas near Washington over the swamp lands. These importations and transplantings were large sized trees of the oak and elm type, ranging from six to ten inches in diameter, and were secured from native woodlands in Virginia and Maryland for the most part. The majority of smaller sized trees, from two to six inches in diameter, were salvaged or imported locally. They were sturdy oaks of the willow and pin types, native Virginia cedars and pines, American elms, sycamores, holly and dogwoods. Some nursery grown trees were selected for special effects where conditions warranted the use of indigenous

types of material to create and embellish the natural location and setting of the highway.

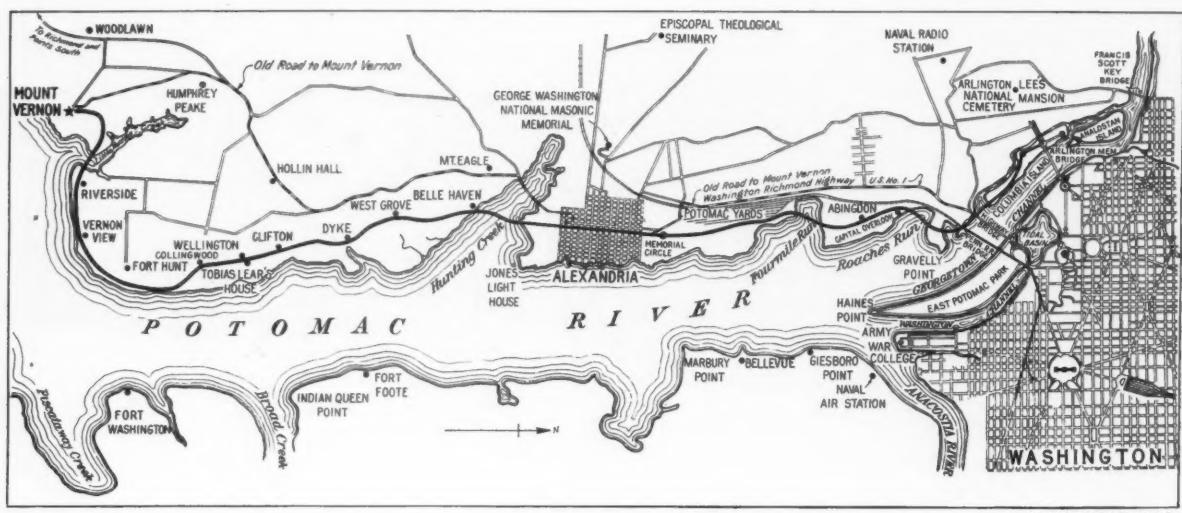
A program of fertilization and feeding was established to promote vigorous healthy growth of all trees, shrubs and ground covering. Peat moss mulch was used in great quantities to insure acidity wherever the native types of plant material demanded, together with ammonium sulphate, cottonseed meal, and other fertilizers.

All of the native beauty at hand was used in the development of the twenty-five acre southern terminus of the highway at Mount Vernon. Trees, forming the dominant character of the composition, were preserved through unusually careful selective removals and proper pruning and treatment along with fertilization. Many of the trees transplanted were from the vicinity of the Mount Vernon estate. As with the rest of the project, landscape planting operations were carried on simultaneously with the construction work so that the plants could become established before the Bicentennial influx of visitors in 1932. Along with the trees many shrubs were collected from the outlying areas of the Washington

this twenty-five acre terminus development may be watered from numerous well placed hose connections during the dry season.

"The Mount Vernon terminus has been planned to be not only fully efficient," Mr. Simonson pointed out, "but also pleasing from an esthetic viewpoint, utilizing the experience of engineers, architects and landscape architects in collaboration. No plan can be too deeply studied or too carefully executed. The entrance to the home of George Washington merits the highest ideals of artistic expression. The simple dignity and permanence of the design in maturity will be in harmony with the plans originally laid down by Washington and will lure the visitor within the walls of this national shrine."

In keeping with the historical nature of the area, many important locations of earlier days have been revived, or rather, in a number of cases, the names applied during the real estate subdivision era of the nineties, when the electric trolley line was constructed to Mount Vernon, have been discarded for the more appropriate original names, having



Map showing the riverfront location of the Mount Vernon Memorial Highway, representing about one fourth of the proposed George Washington Memorial Parkway, which would extend to Great Falls on the Virginia side of the Potomac and return to the National Capital on the Maryland side by way of Fort Washington.

estate for the beautification of the terminus. Native laurel formed the primary evergreen note in the composition, with swamp alder, swamp dogwood, blackhaw, coralberry, and arrowwood having an important place. According to Mr. Simonson, some nursery stock was imported for important locations where accents were needed, including native types of azaleas, honeysuckle, boxwood, leucothoe and button-bush.

Ground cover was planted in lieu of grass in practically all cases, chiefly because of the low cost of maintenance. Outstanding are 25,000 English ivy plants, grown from cuttings secured from the ivy covered boundary wall of the Mount Vernon estate. Somewhat removed from the entrance, where the naturalistic woodland planting occurs, thousands of low-growing huckleberry plants were put out, particularly for their ability to withstand hardships and for their coloring in the landscape scheme.

Because of the danger of long summer droughts, a sprinkling system has been installed at the terminus. This is automatic and of an underground nature, the sprays spaced thirty feet apart within the central area. Even the outlying areas of

a significant historical background. For instance, New Alexandria, just south of Hunting Creek, has become "Belle Haven," its original name, while Wellington Villa, just north of the colonial home of Tobias Lear, Washington's secretary, has once again become "Wellington," as originally named when owned by George Washington. The development of Oaks has become "West Grove" because of its historical proprietary background, and the car stop in front of the Holiday House has been changed to "Clifton" for the same reason. The preservation of these names of Washington's time is in keeping with the nature of the project, to restore the area insofar as possible to its original character.

On July 1, 1932, the entire project was turned over to the Department of Public Buildings and Public Parks, under the direction of Colonel U. S. Grant 3rd, for administration and maintenance, and the program of landscape beautification and restoration will continue to the extent of funds made available by Congress.

In this respect, a number of organizations have taken a part by Bicentennial memorial tree plantings along the roadside. Four American elms were (Continuing on page 96)



At a time, and in a place like this, radio can—and has—saved two days' time in getting men to the fire.

## FOREST SERVICE DEVELOPS PORTABLE SET THAT ENABLES RANGERS TO TALK TO OUTSIDE WORLD FROM THE FIRE FRONT

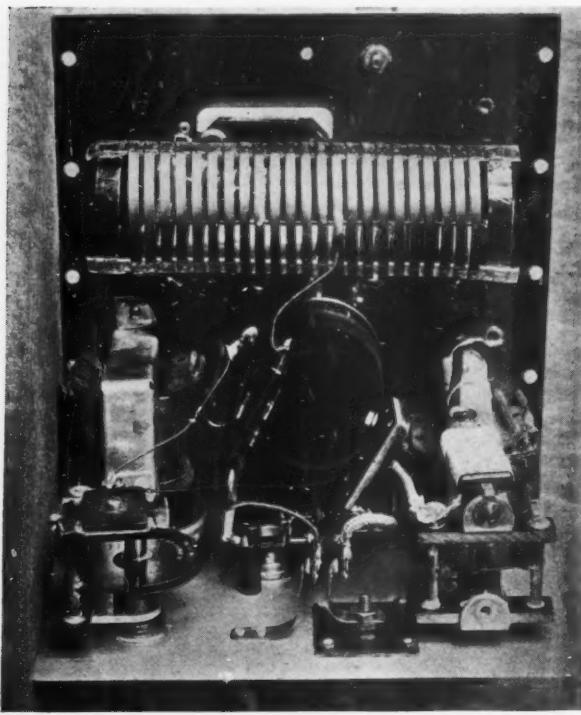
ONE day last summer the forest ranger atop Red Mountain in the Klamath region of northern California needed men—and needed them in a hurry. Down in the valley smoke was billowing up; it looked like a bad fire in the making. Quickly he unlimbered a radio set he had packed on his back up the mountain, and "put it on the air." Within a few minutes another ranger on Salmon River, miles away, had a crew of men on the way to Red Mountain. Had it not been for the radio, the Red Mountain ranger will tell you, action on the fire would have been delayed forty-eight hours, or two days; and two days is a lifetime when a forest fire is out of hand. It isn't remarkable that radio was used in this manner. It has been so used before. The astounding thing is that the radio set, complete, weighed but ten pounds—and it worked.

The United States Forest Service



Carrying the ten-pound radio, the smokechaser starts for a fire in dense timber.

maintains a network of telephone lines totaling more than 40,000 miles. This network is being broadened every year. It is not a complete system, but is made up of thousands of short lines which hook up with commercial lines serving the various National Forests. Since 1928 the Forest Service has been experimenting with radio, not with an idea of supplanting the telephone lines, but rather to supplement them. Progress has been made, but the great need has been for a radio set that could be packed on the back by rangers and smokechasers. The sets developed at that time were too heavy to pack up steep, goat-like paths virtually into and above the clouds, or to carry through the jungle brush of the West Coast region. And they were far too complicated to set up in the double-black of a forest night or in the bright, hot face of roaring, burning timber. The set that would prove really useful, it



A top view of the ten-pound radio, showing the compactness of the layout.

was quickly determined, must be so simple that a man with no radio knowledge could operate it easily and quickly.

These problems made up a good-sized order.

Opinion of radio experts was divided. Some of them said, and with what appeared sound reasoning at the time, that it wasn't possible to devise a set of such portability that a pack-horse could get a mile off the trail with it; while as for making one which a man, even a Paul Bunyan, could put on his back and do anything but fall in his tracks, why, it simply couldn't be done. In fact, when Forest Service radio men were working to make a portable set, the experimental box was termed "the insanity set."

In 1930, Jack Horton, twenty years with the Forest Service, and now assistant regional forester stationed at Portland, Oregon, took charge of the project. He secured Gael Simson from the forest experiment station at Wind River, Washington, and they went ahead, as Horton put it, in an attitude of intelligent ignorance. Harold K. Lawson and Foy Squibb were later added to the staff. Tests had indicated that two special types of radio were needed to cover forest fire work. One was a transmitter-receiver capable of carrying either voice or code over a distance of at least ten miles. The other was a transmitter-receiver so simple, so light, so durable and so compact

that it could be carried anywhere a man could go, and it also must have a minimum transmitting range of ten miles.

There was no radio equipment on the market, or in prospect, that even approached these requirements, so the Forest Service set out to make it. About this time a set weighing seventy-nine pounds was doing good work as a semi-portable machine. But a man didn't put it on his back and strike off through the underbrush with it.

The lightening and simplification processes went on and so did the tests for durability. The forest fire season of 1932 found twenty-six radiophone units weighing fifty-nine pounds each, and ninety-three of the ten-pound units in use in the National Forests in the Pacific Northwest. There will be more next year.

The fifty-nine-pound unit is termed a semi-portable. It is housed in two boxes; one contains the set proper, the other the dry batteries, headphones and antenna. It transmits both ways by either code or voice.

The ten-pound unit also is housed in two small packages; one with the set itself, the head-phones and filament battery, the other a small canvas bag in which the power battery and antenna are carried. It transmits code both ways, the voice one way.

The test used to prove the durability of both sets was extremely forthright and also slightly rough. The complete set was dropped out of a window twelve feet above the ground. Both units took it on the chin, so to speak, and when set up they performed as well as ever.

Although claims for distance are very moderate, being a range of ten miles with voice and twenty-five miles with code for the larger set, and a code range of twenty miles for the smaller set, these figures give no idea of what they have actually done in the field and under trying conditions.

A striking example of what the fifty-nine-pound semi-portable will do was shown last summer during the fire on the Siskiyou National Forest, in northern California and southern Oregon. The ranger in charge of the Siskiyou fire went on the air and presently was talking with the Forest Service station at Vancouver, Washington, 300 miles away, and ordering fire-fighting tools.

Again, a Canadian airplane was forced to land at the Payson airport in the wilds of the Chelan National Forest,



The ten-pound radio set in action—the Forest Service smokechaser in the field gets in immediate touch with his station, ten or more miles away.

in Washington. This airport is fifty miles from the nearest road. The pilot wanted to know what weather conditions to expect. One of the midget ten-pound units at the Chelan Forest Station began tapping out code to the Vancouver station, 200 miles away. The Vancouver office got in touch with the Swan Island airport, learned the weather forecast, and tapped it back to the Chelan Station. The entire performance required forty minutes, about half of which was consumed by the telephoning to Swan Island and receiving the forecast. The Canadian pilot was astounded but also pleased. He took the air and winged back to British Columbia.

Time and again the fifty-nine-pound sets gave and took messages at ranges of several hundred miles, and so has the little fellow. But the greatest use to which the ten-pounder will undoubtedly be put is with the smokechasers, the men who are sent first to a fire to report conditions; and with the scouts on large fires in reporting to their fire chiefs.

Not so long ago a smokechaser went out, sometimes traveling for miles through dense forest, located his fire, and then had to go all the way back to his station to report. Meantime, at the station, they wondered what the chaser was finding. The chaser couldn't very well carry a telephone along with him, with a reel of wire to boot; nor could he climb a tree and wig-wag, signal-corps style, from its top, although several writers of red-blooded fiction have had him do it. No, he simply hiked and crawled as fast as he could all the way back to where he started from and turned in his report.

Consider yourself a smokechaser for a moment. You get orders to go down into the draw along Rocky Creek, where the lookout has spotted some smoke. You strap the ten pounds of radio on your back and you're off. Ten miles down the draw a few little white flecks, light and downy as fireweed in autumn, begin falling around you. As you go on they become thick as thistle-blows. When one of them falls on your hand you pick it up and pinch it; it is like black and



The set-up of the fifty-nine pound semi-portable Forest Service set, which played a big part last summer in the organization of fire control operations.

white powder, ashes. You're getting nearer. You can't see the fire yet, but you can hear it, snapping and crackling. And the smoke is now thick enough to smart your eyes. Presently you hear a roar and through the smoke you see red fire shooting up a tall fir. She's crowning! That's all you need to know.

You take the ten pounds off your back, undo the two little packages, string the brief antenna on underbrush, plug in your head-phones, clap them on, and start pounding *dah-de-dah-dit*—your station's call-letter—on your Morse key. In a moment or two a voice answers you through the headphone.

"All right, go ahead," it says.

Then you pound out the Morse equivalent for "Fire crowning and has a good start up the draw." Then the voice again: "All right. What do you want?"

Then you pound: "Need pumper and crew."

Again the voice in your ear: "We'll send them. Meet pumper and crew at top of ridge and show them to fire."

By now it's getting pretty hot where you are. You slap your ten pounds of radio together and start for the ridge, thinking possibly, that if it hadn't been for the little radio, the fire would have roared up through the draw and to God-knows-where before you could have got back to the station to report. But now a pumper and crew are on the way.

That is a fictitious case, although I have no doubt that something very similar happened many times during the past fire season. Three or four years ago they said it couldn't be done, yet last summer hardly a day passed that radio did not save the Forest Service time and money, and on more than one occasion it was the means of bringing controlling forces to fires which, had it not been for the lightning of the radio waves, would have made white-gray ghosts of thousands of acres of fine, tall, green timber.

It isn't difficult to picture a time not far distant when radio will be the greatest forest guard of them all.



Close-up of the panel of the ten-pound radio set—the little fellow that the smoke-chasers strap on their backs and with which they report fire fighting needs immediately the fire is located and "sized up."



## EDITORIAL

### The Grazing Issue Again

THE resolutions pending in both branches of Congress directing the Secretary of Agriculture to grant a group of western stockmen during 1933 a fifty per cent reduction in the established fees for grazing livestock on the National Forests warrant thoughtful public scrutiny. These resolutions, innocent though they may appear on their surface, have deep significance and embody considerations of tremendous import to the stability and integrity of National Forest administration. They bring up a group of questions foremost among which is whether or not it is sound public policy for Congress virtually to dictate to a Department of the Government action of a purely administrative character. Coincident with that question is the more sinister one of setting congressional precedent whereby a limited class of users of the National Forests may through political influence and pressure obtain for their exclusive benefit special concessions from the government in the form of forest resources.

The proposed concession in this instance amounts in effect to a federal subsidy of approximately \$1,000,000 which would be taken from the income of the Government and from the school and road funds of National Forest counties. That the resolutions in question originated with the grazing interests which will benefit by the concession may be taken for granted. It will be recalled that in the fall of 1931 Secretary Hyde after careful study of the grazing fee situation and after consulting the governors and other public officials in the public land states refused a request of the western sheepmen for a one-third reduction in fees. At that time Secretary Hyde pointed out that only twenty-five per cent of the livestock producers in the western states would be benefited by the reduction; that the National Forest range charges were already substantially below and frequently less than half those charged for similar pasture on private land; that stockmen holding forest permits enjoyed many advantages over other livestock producers and the reduction asked would give them still greater advantage; that there are many stockmen not holding forest permits who would be glad to pay the established fees or even higher ones; and finally that a reduction of the charges would seriously embarrass the school systems in many western states, because of the fact that twenty-five per cent of forest receipts go to the states for the support of local schools.

Following the Secretary's decision, western sheepmen, meeting in Salt Lake City in January, 1932, declared in effect that if the Department would not grant them a concession of at least fifty per cent in grazing rates they proposed to get it through Congress. Shortly thereafter a resolution to cut the rates by one-half was introduced in Congress by Senators Cary of Wyoming and Thomas of Idaho. It was reported that strong political pressure in support of this cut was being brought to bear upon the administration, and these reports

appeared substantiated when on February 25 Secretary Hyde reversed his previous findings and announced a fifty per cent reduction in grazing fees for the year 1932. The Secretary explained his decision was arrived at in consultation with the President and was based upon an emergency situation facing stockmen as a result of the 1931 drought and the prevailing hard winter. He made it clear that the reduction was an emergency relief action applicable only to the year 1932 and that the regular scale of fees would be restored beginning with 1933.

Secretary Hyde, therefore, is committed to restore the regular rates this year. Range conditions during 1933 promise to be normal or better than normal. He cannot again reverse himself without loss of public confidence both to himself and to the administration. The issue would appear to be clear cut. If Congress surrenders to the grazing group and orders the Secretary to continue the concession, then indeed National Forest administration may well have become a game of "to the victor belongs the spoils." Not only sheepmen and cowmen, but lumbermen and other users of the National Forests may besiege Congress for special concessions with the result that administration of the National Forests in the broad public interest will become hopelessly demoralized and spineless.

For ten years and more a group of influential sheepmen of the Rocky Mountain States have sought to break down the range fees and the grazing regulations of the National Forests. If in this instance last year's million dollar concession can be hardened into an annual one, abrogation of the grazing regulations, we predict, will be the sheepmen's next point of attack. It is time for the public to demand that this long-standing menace to its public forests be cleaned up once and for all. The question may well be raised if solution does not lie in changing the government's method of forage disposal. Instead of the present system of fixed rates and range allotments on the basis of past use of the range, why should not the Forest Service adopt the same system which has proved so satisfactory in selling National Forest stumpage? Timber is appraised, advertised in the open market, and sold to the highest bidders. Secretary Hyde says there are plenty of stockmen who would be glad of an opportunity to compete for National Forest forage. Sold on the open market as is timber, there seems little doubt but that the public would receive fairer prices for its forage resources, that federal revenues would be increased, that the states would obtain a larger return for schools and roads, and that the disposal of forest range would be removed from its present very questionable status as a special privilege subject to endless political bickering to a sound business basis. Forage like timber would then be available in a fair competitive market, and those stockmen who are willing to pay fair rates would be awarded the privilege of using the range desired.

# TREE EMIGRANTS

THE SUN NEVER SETS ON AMERICA'S UNITED KINGDOM  
OF FOREST CITIZENS NATURALIZED IN FOREIGN LANDS

By DAREL MCCONKEY

**A**MERICA grows more species of economic forest trees than any other country in the world. The other nations, in planning their reforestation programs, have not been ignorant of this fact and have drawn heavily upon the forest stock of the land. There are 1,177 tree species in America, 182 of which have more or less commercial value.

To understand how it happens that America has some 350 per cent more of tree species than Europe—the first continent in exploration history to be connected with our area—it is necessary to delve into the Record of the Rocks.

When the last Ice Sheet pushed its frigid way southward it exterminated all the rich flora in its path. In Europe it shoved its icy toe against the Pyrenees, the Alps, and the Carpathians. In America it slid easily along either side of

the Appalachian and Rocky Mountain ranges. When the Ice Sheet retreated, determined plants followed in its wake in a self-imposed task of re-establishing floral life across thousands of square miles of long wasted land. Having no mountain barriers to impede their northward progress, American plants triumphantly repossessed the land up and down the Great Plains, and on the Eastern Seaboard. Likewise, few barriers were imposed to regrowth in Asia, northward of the Himalayas. But in Europe, only a very hardy forest life of comparatively few species survived north of the east-west mountain chains to extend itself across the mainland, over the British Isles, and to extend across the sub-arctic Scandinavian peninsula. Trees of many kinds lived in Asia, but the idea that rich Cathay might be reached by the paradoxical



Maryland State Department of Forestry

Europe has drawn heavily on the tree life of America, and *Arbor Vitæ* was first of the long line of trees emigrating from the United States to foreign shores. It was introduced into Germany in 1566.



United States Forest Service

The American Black Locust was first planted in Europe in 1601. Now, more than 300 years later, it is more widely distributed on the European continent than any other eastern American tree.



A fine stand of Weymouth Pine, as our White Pine is known in England, where it was introduced in 1705.

The first tree introduction into Europe from America seems to have been that of the eastern arborvitae to Germany in 1566. Six years before Jamestown was settled, in 1601, the American black locust was planted in Germany. Today, more than 300 years later, the locust is the most widely disseminated

eastern American tree on the European continent. Due to absence of the locust borer, it thrives much better than in its native land, and has become a thoroughly naturalized arboreal citizen. Recently, seeds have been brought back to America for experimental planting in an effort to improve the culture of the valuable tree. White pine was introduced to England in 1705, and shortly thereafter to Germany. It was the first exotic conifer ever naturalized in Germany and later in Austria-Hungary. No European conifer surpasses it in growth, though it was disappointing to the British in their own islands.

The list might be lengthened indefinitely. Eastern American trees of almost every species have been tried in Europe for ornamental and forest purposes. The American red oak has proved valuable on the Continent, having now a wide distribution. It and American maples are much prized as decorative trees due to their lovely autumnal foliage. The eastern red cedar, introduced to Europe in 1664, is prized for its wood in veneer and pencil manufacture, though its growth is comparatively slow.

By the turn of the nineteenth century, American exploration had reached the Pacific Coast. With a burst of promise,

method of sailing West to reach the East brought the American continent into the picture first. Consequently, America's flora was used to bolster Europe's long-impoorer woodlands before Asia's tree wealth was fully understood.



Eastern Red Cedar, introduced to Europe in 1664, though a slow grower, is valued there for veneer and the manufacture of pencils.

Europe looked expectantly upon the giant sequoias and other large and promising conifers, as, at long last, a group of trees to build up its forests. Here was a west coast lapped by the warm Japan Current, a climate similar to western Europe, itself basking in the favor of the Atlantic's Gulf Stream.

With conifers everywhere more on the wane than hardwoods, reforestation with conifers has come to be almost a world-wide need. And many a nation looks to the American Pacific areas for suitable stock, just as in that early day expeditions were sent out to investigate and bring home seeds and plants. Douglas fir, named for David Douglas, an English plant explorer; Menzie's spruce, named for Archibald Menzie, now called Sitka spruce; Coulter's pine; and Lawson's cypress, were all named for British explorers of this intensive period. And, fittingly enough, many of the trees so discovered have entered with amazing success upon the European silvicultural field.

Douglas fir is today reckoned the most popular and successful exotic ever planted in Europe. It succeeds from Norway and Denmark through Scotland, Ireland and England, all across the European continent, in France, Holland, Belgium, Germany, Austria, and in the Balkan States. England had but three conifers left from the disaster of the Glacial Epoch, and only one of these, the Scotch pine, was of value commercially. The Scandinavians had even a lesser number.



A thriving young Douglas Fir in a plantation in Prussia. This tree is the most popular and successful exotic ever planted in Europe.

Today, Douglas fir and Sitka spruce are being used more and more in European reforestation and afforestation programs.

For 100 years, following its introduction by Douglas in 1827, Douglas fir led the two Pacific Coast trees in popularity. But in the past decade, due to the inroads of disease, it has been losing



Sitka Spruce, which is being used more and more in European reforestation programs because of its strength and adaptability.

favor while Sitka spruce has gained. In 1922 the Forestry Commission of Scotland made six per cent of its plantings with Douglas fir and seventeen per cent with Sitka spruce.

The sequoias were a disappointment to Europe. These finest of all trees could have well been used to reforest Continental lands. But they thrive only passably, except in milder locations. They have a wide use as ornamentals, but the redwood has been used with success for reforestation only in Portugal. The redwoods were discovered about 1850, and were introduced to England without delay. They reached Germany in 1853, and France shortly thereafter.

From France, *Sequoia sempervirens* made a most interesting journey to Algeria in 1864. Planted in a mountain region, it thrived so well that in 1928 a French forester, Trabut, recommended further planting for reforestation purposes. In sixty-four years the trees had surpassed seventy feet in height and eleven feet in circumference.

Though England has been most successful in the use of Pacific Coast exotics for forestry planting, eastern American trees, especially the broad-leaf or hardwood trees, have been a source of considerable disappointment. A curious law covering their failure, based on long and keen observation, was worked out by the late Augustine Henry, the essence of which is as follows:

If of a genera which has a representative species both in eastern America and western Europe, an American tree refuses to grow in Great Britain. An instance given is the American white oak, closely related to an English oak. Thousands of pounds

representative of the common European ash, is unable to live in Great Britain.

"If, however," stated Mr. Henry, "the American species belongs to a genus, or a section of a genus, which is unknown in western Europe, it grows well in Great Britain." He instances red oak,



A man-planted forest of Monterey Cypress over forty years old in the South Island, New Zealand. Note the characteristically persistent side branches.

*Pinus insignis* — "Remarkable pine" — known as Monterey Pine on the California Coast, has written an amazing chapter in the annals of tree travel.

pin oak, white ash, red gum, black locust, and black walnut. It is useless, however, to attempt to grow American beech, chestnut, hickory, or catalpa in Britain. Curious things sometimes happen to exotic trees, be they taken to any country other than their native land. *Magnolia grandiflora*, the green bay tree of America, for example, a valuable ornamental and timber tree in this country, when taken to Europe is useless for timber purposes. It becomes a bush or shrub, or is trained to grow on trellises, or against houses, almost like a vine. Black locust, as pointed out before, thrives more readily in Europe than at home. Douglas fir from some parts of the Pacific Northwest has a more rapid growth in England, Germany and Holland than on its native soil. The blue spruce of western North America, popular as an ornamental in the British Isles, reaches only half the height it attains at home, yet is used successfully in Switzerland as a windbreak and for protection on high altitudes. The white pine, known as Weymouth pine in England, a native of the eastern United States, does poorly in the British Isles, grows to much larger dimensions in the lowlands of Switzerland and Baden, and in Central Europe vies with the Douglas fir in rapidity of growth. Jack pine prefers limestone soils in France, but does not occur on them in America, hence would hardly be expected to be adapted to this type of soil. The American poplars, though they do not themselves show any great liking for Europe, when crossed with trees like the Italian black poplar, create hybrids which are of great economic value.



Redwoods, found only in restricted areas in America, have found conditions in many European places favorable to their growth.



Our Swamp Cypress has gone to far Hawaii and even India, and given a good account of itself in reforestation operations.

were spent in an attempt to introduce this tree previous to 1838, but only one white oak is known to exist in England today, an aged, stunted specimen at Totworth, scarcely twenty feet high. Black ash, Canadian repre-

The sequoias, though they cannot be grown outside their limited range in America, have found favorable conditions many places abroad. Sycamore or plane trees refuse to grow in England, yet the tree most often seen in London is probably a cross between American and Oriental forms. Space forbids mention of hundreds of exotic trees which have had reasonable success, or have failed entirely when planted abroad, though climatic, soil, and other conditions were apparently the same as in their native land.

The enthusiasm of foreign planters for American trees has at times taught a lesson in utilization to Americans themselves. For instance, Douglas false hemlock was introduced to England about 1820 as a timber-producing tree and ornamental. It was from its use as a decorative plant in England that eastern America discovered the value of the tree for this purpose. Mayr, in 1890, first called attention to the super-excellent silvicultural qualities of the jack pine. As a result its cultivation was begun on a large scale all over Germany, Russia, Austria, and, finally, America.

A second amazing chapter, standing out among thousands of successful or passably successful introductions, appears in the annals of American tree

travel. It grew out of England's desire to rehabilitate her lands with forest trees that would rightfully have been hers by evolution and primogeniture except for the intervention of the Ice Sheet.

A tree of only indifferent importance, due largely to its limited range, grows in America along the California coast. It is variously called Monterey pine, "remarkable" pine, *Pinus insignis*, and *Pinus radiata*. In 1833,

Douglas introduced specimens of this tree into England. It grew well in milder portions of Ireland and England, but, due to limited range and inability to stand the rigors of wind and winter, was not considered a particularly successful exotic.

About 1875 the *insignis* pine was introduced to South Australia, probably by Baron Sir F. Von Mueller, though there is no historic certainty as to either the exact time or agency of its transplantation. By 1903 its value was apprehended by Australian foresters, who demonstrated its value through lumber sawed by the government for the building of fruit crates. By the time of the Great War the tree had thoroughly earned its name, the "remarkable" pine, for its growth far outstripped that in its native country, and it began to loom as "the North's great gift to the Antipodes."

*Pinus insignis* has shown remarkably rapid growths of fine timber in Australia, New Zealand, Tasmania, and South Africa. A paragraph from T. W. Adams, New Zealand forester, will illustrate. Referring to the South Island of New Zealand, he says: "When first settled this country was nearly devoid of trees, the soil being covered with coarse grass, on account of the constant severe wind. Larch, spruce, and Scots pine were planted in millions, but these trees rarely succeeded except in sheltered spots. On the introduction of *Pinus insignis* it was seen at once that the tree had been found which filled the billet, and in a few years beautiful plantations covered the face of the country."

An indication of the "remarkable" pine's growth may be found in comparative figures on its productivity. The highly organized forests of Germany give a financial yield varying from one to four per cent, whereas *insignis* pine, on a forty-year rotation, and estimating seventy-five per cent efficiency in yield, realizes from six to nine per cent, depending on the cost of the land,

and on a twenty-year rotation realizes from six to eleven per cent return. "Of all tree species the one best known today outside its native country is perhaps the Monterey pine," states E. N. Munns of the United (Continuing on page 94)



White Ash is hardy and successful in Manchuria, where the temperature ranges from sixty below in winter to ninety above in summer.



The Mesquite of our Southwestern deserts is highly valued in Central Queensland, in Australia, both for its honey and as an ornamental, shade and forage tree. In the Hawaiian Islands mesquite is now also quite common and very valuable.

# PRISONERS IN THE FOREST

## AN INCIDENT OF THE WORLD WAR

By ERNEST GONZENBACH



Underwood & Underwood

When the Forests of the Argonne screened the batteries of the French.

No doubt it would be less difficult to accept the incident I am about to relate as a true recital had I the courage to call my characters by name, to adhere strictly to exact locations and time. But there are certain inhibitions that are a hang-over from war days which function to restrain me. Even so, there are a number of Americans with good memories who will all too readily identify some of the characters and scenes I shall mention and describe.

To begin with, there was Private Boynton, one of those hardy sons of the northern woods breed. He claimed to be forty years old, but I suspect that his years had been marked down for quick sale to the military authorities. He had volunteered, of course, as had everybody who went to France in the summer of 1917. The particular fighting unit to which he belonged is not important; enough to say that he saw action immediately, long before the big push that followed.

Somewhere around November of that year his unit "leaned up against" a gas barrage, and the following summer found Boynton assigned to light duty at a base hospital, where his lungs could receive proper treatment. It was there that I met him. In need of slight repairs myself, and unable to navigate without assistance, some one with rare genius for matching compatibilities had assigned Boynton to me as an orderly. For days to come this little woodsman, seated at my bedside, took me on a great adventure. Bit by bit he told me the story of his life, and as I listened it seemed to me that there was being related a first-hand account of Daniel Boone, slightly revised and brought up to date.

Boynton's life had been spent in the deep woods of Maine. In the winter he ran a line of traps, while the spring brought

city fishermen. In the fall he guided mighty nimrods with mighty guns, and mightier pocketbooks, and for a consideration allowed them to stand with one foot on the neck of some fallen game while he snapped the shutter of a camera. He confided in a whisper that not often had the hunter fired the fatal shot.

He was just the companion I needed. There had been a time when I had known something of his world and had loved life as he knew it. It is true that I was not an American by birth, having been born and reared among the mountains of Switzerland, but I was a long way on the road to the type of American manhood that he personified. At various times I had been a freebooting amateur hunter, trapper and fisherman in many parts of the United States.

After a while I was able to sit out in the little park opposite the hospital and, naturally, we renewed acquaintance with the outdoors. Boynton never tired of pointing out familiar trees and often asked me to tell him the names of specimens he did not recognize. One day he brought a branch with leaves attached.

"Now ain't that the funniest basswood you ever did see, Captain?"

It was a branch of *Tilia cordata*, a well known European linden variety, with very small leaves, which I identified for him. He seemed greatly amused.

"*Tilia*," he said, "is a girl's name. How come a tree is called by a girl's name?"

I realized then that for all his woodsmanship he had not even a rudimentary knowledge of botany. A tree to him was a hostile object, to be conquered and downed at the first opportunity.

One day we found a magnificent specimen of English oak, a misleading name, for it is found all over western Europe and down into Africa. The acorns were just forming and when I told Boynton that they grew to be an inch and a half long, he countered with some backwoods witticism meant to convey that he could tell as tall a lie as I could. But he put some of the acorns in his pocket and looked at them from time to time.

Early one sparkling June morning Boynton excitedly announced that he had a treat in store for me—a canoe ride. I scoffed, there were no canoes in France. But secretly I hoped that he might be right. The river rolling past the little town was running full with a swift current. I wondered if the two of us were strong enough to handle a canoe in rapids. Anyway we would look over the ground.

On the way to the river Boynton admitted that he had not seen the canoe, but had heard the men at the dock talking about it. The word was the same in French as it was in English. Weren't there a lot of Canucks in Maine and hadn't he often heard them?

We were disappointed, as I suspected we would be. Boynton had overheard the men speaking of a *canot*, the French word for rowboat. But we did have a boat ride. The white water had gotten into our blood and I hired a passing carter to haul a *canot* to a point above the rapids, down which we floated like a couple of Sunday picnickers in a park. It was all unexciting and without danger. The one incident that makes the memory of it stand out occurred after we were idly floating in the quieter water below the swift current. Boynton was resting on his oars, absorbed in deep thoughts. Suddenly he asked a question that must have been suggested by his suppressed hankering for a canoe.

"Captain," he said meditatively, "this here's a funny country, ain't it? We been ranging the woods before we got to the hospital and some since we been able to get around, but did you notice we ain't never seen no Indian signs? I don't believe they ever had any!"

It would have been too bad to spoil his illusions and I let it pass; nor do I know if he ever did find out. A country that never had Indians could not be much of a country, no doubt. It was by just such things that Boynton and I had become very good friends by the time we had our little adventure with the prisoners in the forest.

The weather had been warm and by July it was hot. Long ambulance trains with wounded men came from the front daily, a sight that affected Boynton more than it did me, for I think he was beginning to see the end of his trail. I was the stronger now, and really did not need an orderly, but a kindly commanding officer noticed how well we were getting along and let the arrangement stand—I suspect for Boynton's benefit more than my own.

There were days when we ranged far afield, even into the hills that surrounded us on all sides. I had worked out a convenient arrangement with a stodgy peasant to call for us early in the morning and drive us well up into the higher levels. There he left us and we returned to the valley on foot, following no roads and loitering in the woods as fancy dictated.

Human habitations were few in the hills, but the well managed forestations were an interesting study to me, even though I failed to interest Boynton in the subject. He did observe the orderly appearance of woodland, however, with the comment that the forests looked as if they were curried and combed every morning, which is not a bad description at all.

Such human beings as we did meet were charcoal burners; and the average American reader will not get the thrill out of that which belongs to it. What the red-skinned Indians are to American boys, the sooty-faced charcoal burners are to the French. They are a mysterious people who live deep in the forests and are shunned by the cleaner humans who

live in the open sun. Small boys will make a detour around places where these *charbonniers* are known to be living, and even *gendarmes* have evidenced fear of them. European history is full of the romantic things that have happened in the huts of the *charbonniers*.

They are not a lawless folk, for their burnings are always conducted under fixed arrangements with owners of the forests, either private or state; it is the method of their living that has cast a shadow over them. They are generally believed to be game poachers, and in Europe that is not the slight misdemeanor with which Americans treat the matter. Until comparatively recent times—as time is counted in Europe—the unauthorized killing of wild game called for a hanging. The punishment may not be so severe now, but the act of poaching is still regarded as a major crime.

There was one fellow of unguessable age with whom we had become quite friendly; sometimes we went out of our way to talk with him, although my fairly fluent French was no match for his atrocious dialect. Whenever we came within sight of his hut there was a hurried scurrying of his brood of children. We never knew how many there were, for they disappeared into the underwoods like a flock of young partridges. His wife was a squat, ungainly woman who never uttered a word. She would sit with knees wide apart peeling potatoes or slicing food into a pot.

There was a day when we were offered food from that pot and accepted. Immediately we were curious about a delicious kind of lean meat that had a gamey flavor. I poked it with a finger and made loud gustatory noises indicating my appreciation, as one should when a *charbonnier* entertains. The fellow became restless and looked at me sharply, finally hinting diplomatically:

"*Monsieur le Capitaine* is a gentleman of discretion, *n'est ce pas?*"

Boldly I winked, assuring him of my discretion, and we laughed together and talked as friends. The meat was that of *sanglier*, the wild boar of Europe, the hunting of which in olden times was a royal prerogative. The boar is still rigidly protected as a game animal. No doubt they still poach, those *charbonniers*.

One warm day, after we had passed the wood burners with a wave of a hand, we spent the forenoon in an interesting lot of conifers, about seventy-five years old and ready for the ax. It was the end of their rotation period. After cutting the land would be replanted to oaks, which would be carefully thinned out for two hundred years. When the oaks were logged the land would again be made to produce conifers. These two hundred year rotations never did register with Boynton, who would shake his head at their mention, as if regretting something.

About noon we rested near a little lake and had our lunch, which Boynton had carried in a *musette* bag. In no time at all we were sound asleep in the shadow of a low bush. The shadow must have moved, for soon the sun beat in our faces and we decided to try the clear lake water. Stripping to bare skin, which is the best way to go swimming, we paddled around. Then again we lay in the sun, this time to dry. I was almost asleep again when Boynton gave me a nudge and whispered in my ear.

"See them two 'frogs' over there; ain't they dirty though?"

I saw two men, naked as we were, but brown with caked dirt from their feet to their loins. Their faces were streaked with dust and dirt. They had not seen us and we moved out of sight slowly, thinking it would be well to lay low until we knew what was up, for they were not wood burners.

Presently they entered the water, stepping gingerly as if their feet hurt, and began a vigorous scrubbing of their bodies. Curiously enough, in the process, they would suddenly stop as though looking or listening for something. I have seen wild animals do the same (Continuing on page 95)

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# FORESTRY LOOKS UP IN THE SOUTHWEST



On the Lincoln National Forest—a heavy stand of magnificent western yellow pine.

By G. A. PEARSON

THE Southwest is noted in forestry circles for the slow growth and poor reproduction of its forests. Localities, like persons, sometimes acquire a reputation which is not wholly deserved. That the stands are less dense and the growth slower than in the best timber regions of the United States cannot be denied. Yet, extensive areas of virgin ponderosa pine compare favorably in volume per acre and size of individual trees with forests in other regions. It is not generally known, for instance, that on the Colorado Plateau is a belt of a million acres, large areas of which will average between fifteen and twenty thousand board feet an acre. Not a heavy stand when compared with Douglas fir in the Northwest, but pretty fair timber nevertheless.

Since the early "Forest Reserve" days great concern has been felt because of the failure of pine lands to restock after cutting. This was the first problem assigned to forest research in the Southwest, and for more than twenty years it was the foremost problem on the program of what is now the Southwestern Forest and Range Experiment Station. Attention was naturally focused on sections where reproduction was at its worst, namely the extensive timber operations around Flagstaff, Arizona. Relatively little was said about the excellent reproduction on the Santa Fe and Sitgreaves National Forest and the south end of the Coconino. The reproduction here, however, was advance reproduction which had started in virgin forests through no conscious effort on the part of foresters, outside of fire protection. The fact could not be ignored that where advance reproduction was not present at the time of cutting, areas in many instances had remained unstocked for more than twenty years. Foresters were seriously asking themselves this question: "Are we really practicing forestry or are we merely selling timber?"

Meanwhile the experiment station was studying the reproduction problem. A long series of investigations culminated in a comprehensive publication entitled *Reproduction of Western Yellow Pine in the Southwest*. Analysis of climatic records and records of germination and survival showed that high infant mortality must be expected. It was found, however, that a few seedlings became established every two or three years and that on this basis fair stocking should be obtained in about twenty years. It was also found that at long and more or less indefinite intervals, estimated at twenty to forty years, "waves" of reproduction had swept the region. Such a wave was experienced in 1919. So widespread and bountiful was this seedling crop that 1919 marks the beginning of an epoch in forestry events in the Southwest. A similar wave has been traced back to about 1880. Good

survival was also recorded in places in 1914 and 1917. In the face of such favorable evidence, it was difficult to account for the failure of reproduction on cutover areas which were adequately provided with seed trees. The answer was found in grazing. Early records had shown that livestock browsed seedlings of all sizes. Records of the 1919 crop proved beyond a doubt that small seedlings were killed in sufficient numbers to account for the failure of reproduction on areas of considerable extent.

The story of the prolonged conflict between timber growing and grazing in the Southwest is well known and need not be repeated here. Suffice it to say that substantial adjustments have been made in the National Forests, mainly through removal of about fifty per cent of the livestock, and further measures which have brought about better distribution of stock on the range. These changes have benefited the range and the livestock industry as well as the forest.

Following the large reduction in numbers of stock which took place mainly in 1926, browsing of pine seedlings practically ceased or became localized on areas of concentration such as watering places, bedgrounds, trails and driveways. In subsequent years this localized damage has been decreased by fencing, segregation of cattle and sheep, and other administrative measures designed to prevent excessive concentration of livestock. Most remarkable has been the recovery of damaged seedlings. Many that had been browsed until they resembled bushes or mere rosettes and had persisted in that condition for years or decades, began to develop crowns, and after two or three years began to put forth leaders. Not all by any means have regained normal form, but the outlook is most encouraging. Damage is still evident in places. Removal of leaders, a common practice by both cattle and sheep during June and early July, might seem to be very

serious; but new leaders form quickly and it has been found that unless the same tree is severely attacked year after year it usually makes substantial height growth.

More vital is the biting of small seedlings in their first and second years, for in this stage the entire crown may be removed, in which case the effect is fatal. Fortunately, this class of damage, which was common in 1919 and 1920, is very little in evidence at the present time. Investigations at the Southwestern Forest and Range Experiment Station are now seeking to learn the basic reasons why livestock browse

pine seedlings, and to devise methods of handling stock which will reduce the amount of damage to a minimum. It has long been contended by range research men that overgrazing, or attempting to graze more stock than the range can comfortably support, is the primary cause of damage to trees. The truth of this contention has been demonstrated on a large scale during the years since 1926.

The outstanding fact from the standpoint of forest management is that grazing has ceased, for the time being at least, to be a silvicultural obstacle. On thousands of acres where six years ago for-



Showing advance reproduction in a mature uncut stand of ponderosa pine in the Fort Valley Experimental Forest. The removal of the old trees will stimulate growth of the young ones.

est reproduction was at the mercy of livestock, the forest is now becoming the aggressor by replacing grass areas with pine thickets. Should grazing damage again assume dangerous proportions, the experience of 1926, supported by findings of research, furnishes a substantial background for remedial action. The entire outlook in forestry has changed. Ponderosa pine forests may now be harvested with full confidence that they can be restocked. As a safeguard, and in order to gain time, advance reproduction is always to be encouraged; but it has been demonstrated that, except on very adverse sites, reproduction can be obtained after cutting. This presupposes proper silvicultural measures and adequate control of fire, grazing and rodents. There are now

This shows good reproduction on an area logged by the Forest Service in 1909. The seedlings have all originated from seed cast by the large trees left for this purpose, and in the meantime the volume of merchantable timber has increased by over 2,000 board feet an acre.

few cutover areas on the Cocomino, Tusayan and Sitgreaves National Forests, logged under Forest Service supervision, which are not restocking at least in fair measure. Extensive areas may be classed as well stocked. An encouraging aspect of the situation is the fact that the reproduction is by no means confined to the 1919 age-class; the 1914 and 1917 classes are also represented, to say nothing of 1929 and 1930 classes. It is true that much of the stocking is not dense enough to make good sawtimber. To some extent this can be corrected by subsequent natural seeding in, a process which nature is now applying in thinly stocked young stands. At any rate it is reasonably certain that nearly all the timber lands can be stocked sufficiently to produce wood crops. If the future market demands clear boles, it will probably become necessary to resort to pruning. In this problem the Southwest



feet an acre can be realized. On the better sites considerably higher yields may be expected under intensive management. A hundred board feet an acre would be regarded as a low increment in some regions, but the regions of rapid growth also, as a rule, have high fire losses which will substantially decrease this margin over the Southwest. Arizona and New Mexico have fires and plenty of them but they are susceptible of control. Comparatively few timber fires attain a size of



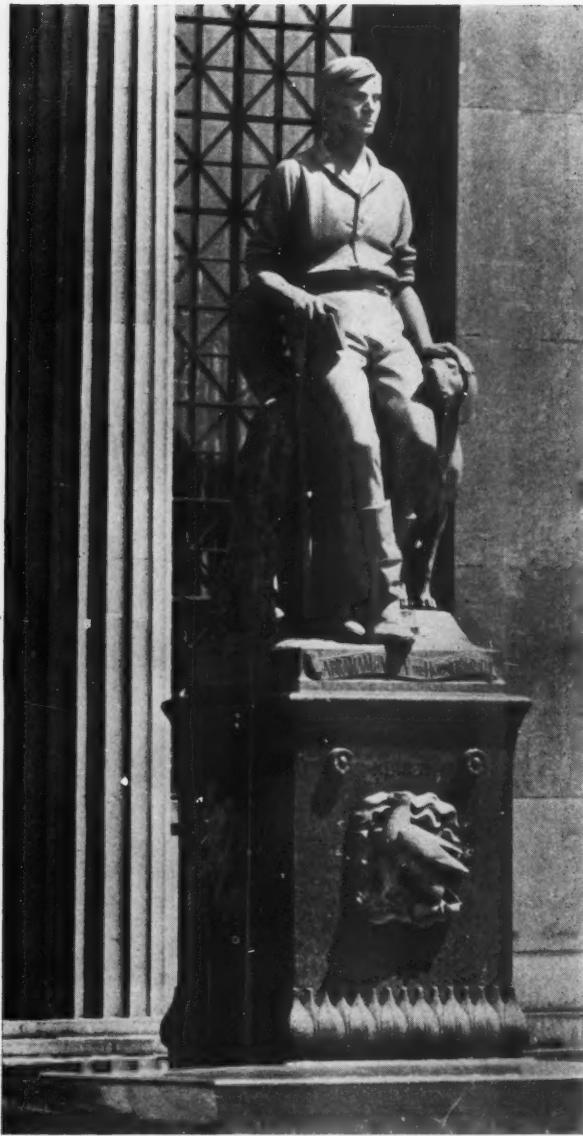
This is a fully stocked stand of ponderosa pine thirty-five years old, which has been thinned and pruned. A dense carpet of needles makes a perfect soil cover.

as much as one hundred acres, and a thousand-acre timber fire is rated as a near catastrophe. What saves the day for the Southwest is that when the fire situation begins to be really critical in the dry month of June, the July rains are just around the corner. It is these same rains that make possible the germination of pine seedlings, for the spring season is usually either too cold or too dry.

Natural reproduction not only insures the perpetuation of timber stands, but after the saplings are large enough to form a mat of needles they are also the best safeguard against soil erosion. Western yellow pine forests are usually rated as

does not stand alone. Investigations by the experiment station have shown that on cutover areas logged with due silvicultural care a net annual growth of one hundred board

rather inferior water-shed cover. This is true only if they are overgrazed or burned. Even logging accelerates erosion only temporarily if both cutting (Continuing on page 94)



"LINCOLN, THE HOOSIER YOUTH"

The heroic bronze, by Mansfield, at Fort Wayne, Indiana, whose unusual character has made it the center of interested discussion.

**A** MAN with an ax is an outstanding figure symbolizing pioneer days in America, and it is therefore very appropriate that the most recent heroic bronze statue of Abraham Lincoln should represent him as a Hoosier youth leaning against a stump with an ax by his side. While the dog in this work of art may have more human interest than the humble instrument with which Lincoln was so familiar, nevertheless the ax occupies a very important place in the composite study.

Civilization, cutting its way around the globe, has demanded of the forests the greatest sacrifices. The revolving world of the modern day contains no obscure corners where trees may hide from man. Their only hope of survival in many sections is through the intervention of those who are interested in them for beauty's sake and through the plans of the economists, who are willing to wait for their slow but sure dividends.

# LINCOLN ▲

## THE HOOSIER WOODSMAN

By LOUIS A. WARREN

While the identity of a growing tree today is soon lost as the machine turns it out into every conceivable form, it was not so in the rustic age of history. The very homes in which people lived were but tree trunks with bark still on, placed one upon another until they finally converged and formed a roof. Without and within, the log cabin preserved the forest atmosphere and often the only implement used in the construction of these log cabin dwellings was an ax. It was in a home of tree trunks that Abraham Lincoln grew to manhood.

In writing an autobiographical sketch in the third person, Lincoln said: "Abraham, though very young (eight years), was large for his age and had an ax put in his hand at once; from that time until his twenty-third year he was constantly handling that most useful instrument, less of course in plowing and harvesting time."

His apprenticeship, begun at so young an age, allowed him to become very proficient in the use of this pioneer instrument. Some of the neighbors of the youthful Lincoln have left reminiscences which state that one hearing the young giant chopping in the forest would conclude that three or four men were at work. Lincoln's first wages are said to have been earned through this occupation.

After the pioneer had built his log home the next task which confronted him was fencing in the fields he wished to cultivate. A reminiscence of Lincoln upon reaching the Illinois country reveals how extensive an industry rail splitting became:

"Here they built a log cabin into which they removed, and made sufficient of rails to fence ten acres of ground, fenced and broke the ground, and raised a crop of sown corn upon it the same year."

It is evident that much more timber was used in the making of rails than in the building of cabins. While the working up of the logs into rails to a large degree sacrificed the identity of the tree, yet it contributed much to the rustic appearance of the early home.

In the early days nothing but the best timber was used for making rails for a fence. Poplar, oak, hickory, walnut and ash were available. A likely tree was selected and the ax then brought it down. The ax was also used to cut the trunk into ten foot lengths. The maul and wedges were used for the quartering process but the ax was picked up again for the actual rail splitting. The rail was usually cut about four inches in diameter, and the real problem of the woodsman

was to get the greatest number of rails from a given trunk. The average rail splitter could average about four hundred rails a day.

The fence built from these rails was an ingenious construction. The location of the fence was first designated by tall stakes in perfect alignment. A measuring rod about four and one-half feet long was then used to determine the location of the corners in this zigzag barrier. The "worm" or bottom rail was first laid and care was taken not to select sap wood for these foundation rails. At the corners the bottom rails rested on the "ground chunk," a stone or a piece of durable wood serving for this purpose. The fence was usually built ten rails high and a line of rails on top of the structure helped to strengthen it. If it was well built it would be "pig tight, horse high, and bull strong."

A man who hired Lincoln to work for him occasionally has this to say about his labor: "Lincoln was mighty conscientious in getting in a full day. There was always results from his labor and he spoke very little when he was at work. Now and then after a steady pull of an hour or so, we would set on a log for a few moments to catch our wind and Lincoln would tell some yarn he had heard, something funny,



To this log cabin in 1808 Thomas Lincoln brought his family, and here on February 12, 1809, Abraham Lincoln was born. The cabin stood on a farm two and a half miles from Hodgenville, in La Rue County, Kentucky. It is now housed within a beautiful temple in the national memorial to Lincoln at Hodgenville, Kentucky.

always interesting. He was a master woodsman and could size up a tree that would work up well into rails almost at a glance, but that was common enough in those days when forests were all around and men worked in them."

Lincoln not only lived in the forests while a youth but he wove into his addresses in after years many illustrations based on his early experiences in the woods. The conclusion of his famous Lyceum address shows the influence of the woodsman's environment. He had suggested that the revolutionary soldiers who survived were like living histories of the war. He then continued:

"But those histories are gone. They can be read no more forever . . . They were a forest of giant oaks; but the all-resistless hurricane has swept over them, and left only here and there a lonely trunk, despoiled of its verdure, shorn of its foliage, unshading and unshaded, to murmur in a few more gentle breezes, and to combat with its mutilated limbs a few more ruder storms, then to sink and be no more."

When Edwin Markham composed *The Man of the People* he found in the forest atmosphere much to influence his tribute to Abraham Lincoln. He wrote:

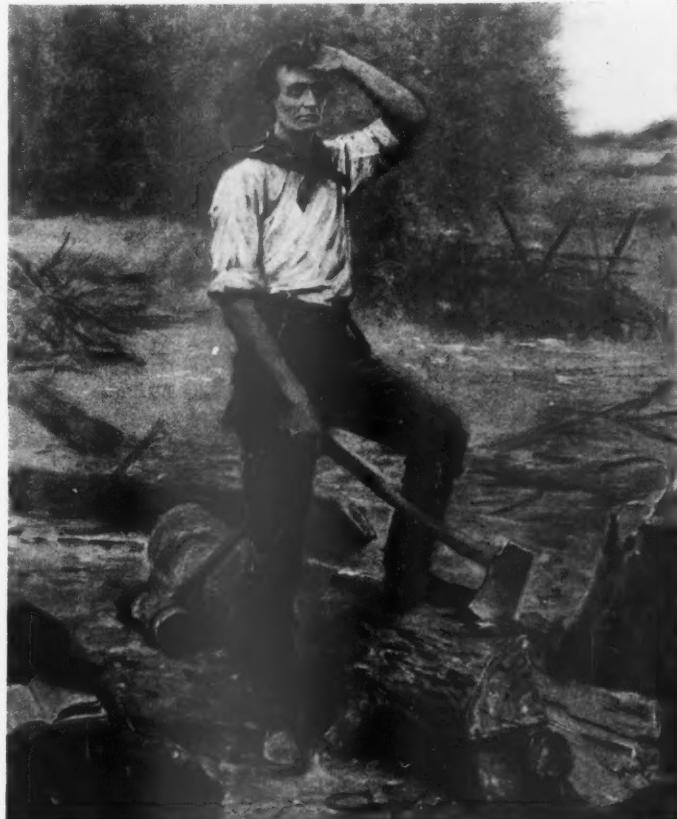
"The strength of virgin forests braced his mind,  
The hush of spacious prairies stilled his soul."

Markham continued on this forest theme for several lines recalling that:

"He built the rail-pile as he built the state."

and then, inspired by Lincoln's great sacrifice, he wrote:

"And when he fell in whirlwind, he went down  
As when a lordly cedar, green with boughs,  
Goes down with a great shout upon the hills;  
And leaves a lonesome place against the sky."



LINCOLN, THE RAIL SPLITTER

From an old print, copyrighted by F. A. Schneider.



There is no greater lure to the lover of the out-of-doors than the wilderness trail.

# Announcing the— "TRAIL RIDERS"

The American Forestry Association Offers a New and Unique Service to Those Who Would Answer the Call of the Wild Places in the National Forests

THE American Forestry Association invites lovers of the out-of-doors to join the "Trail Riders of the National Forests" and ride beyond the outposts of civilization during July and August into the wild, untamed back country of Montana.

These excursions into the primitive woodlands are sponsored by the Association as a service to those who seek vacations in forest country that typifies the western wilderness of one hundred years ago. Two trips will be made under the direction of the Association, with the United States Forest Service and the Northern Pacific Railroad cooperating, and at a cost so reduced that it will be within the reach of everyone.

The first ride will be into the great South Fork wilderness of the Flathead National Forest, while the second will take the riders into the romantic and wild Sun River country of the Lewis and Clark National Forest. The first trip will require six days and will be made in July. The second, in August, will be for five days.

Thus the "Trail Riders of the National Forests," as those joining the parties will be known, will spend days in the saddle, evenings around dreamy campfires, and nights in restful sleep on beds of fir boughs. They will be far removed from the "madding crowd," where trails are the only highways and remote ranger stations and miners' cabins the only habitations.

They will see nature unmarred by man, virgin forests untrod save by the wild things that haunt them. They will see unnamed waterfalls, mountains that seem to touch the stars, age-old solitudes where creation still holds its masterpieces.

Have you ever longed for this?—ever wished to answer that inherent urge for adventure and for physical exploration?—ever sought to fulfill a desire for mental repose and spiritual adjustment, to renew your vitality, to restore your faith so that in life's battle you may conduct yourself with clearer vision and greater vigor?

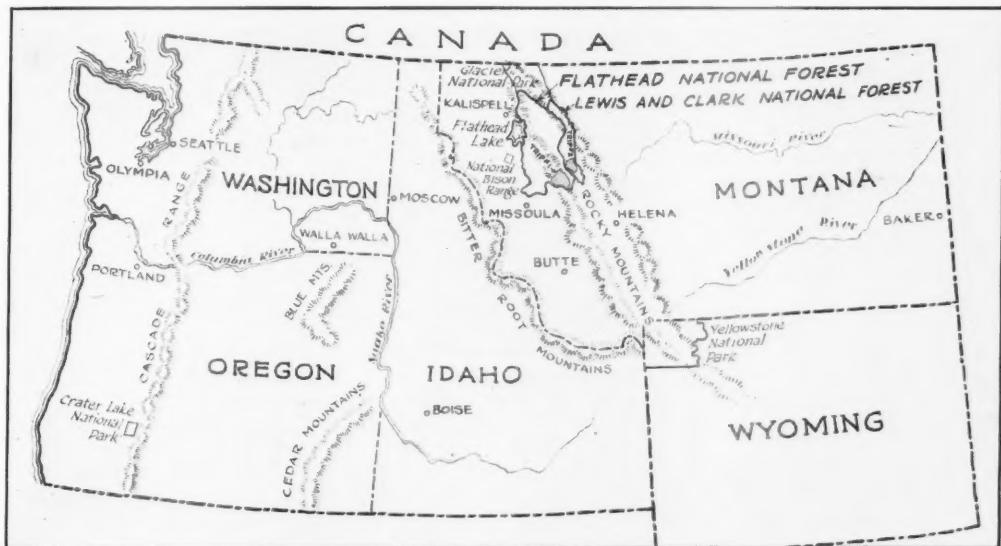
If you have, come with the "Trail Riders of the National Forests" next summer! Ride with The American Forestry Association into the untamed forest!

In the March issue of AMERICAN FORESTS there will appear an illustrated article describing the country which the first ride will penetrate—the rugged South Fork of the Flathead River in the Flathead National Forest. All details and costs of the trip will be given. In the April issue the second ride will be fully described—five unforgettable days in the Sun River wilderness of the Lewis and Clark National Forest, one of Montana's most primitive regions.

In the meantime, make your plans. Write The American Forestry Association, Washington, D. C., for additional information. Remember, two trips—one in July, one in August.

"—and the Wild is Calling, Calling—  
Let Us Go!"

# OF THE NATIONAL FORESTS"



The goal of the "Trail Riders of the National Forests" this summer—the wild backwoods of the Rocky Mountains in Montana. The shaded portion of the Flathead National Forest, in the map above, indicates the South Fork wilderness area (Trip No. 1), while the shaded area of the Lewis and Clark National Forest, to the east, shows the great Sun River wilderness (Trip No. 2).



How the Trail Riders will enter these wilderness areas.

# A Month's Work for Two Million Men

Secretary Hyde Submits Estimates Revealing There is Work to be Done on the National Forests That Would Furnish Employment Aggregating 135,000 Man-Years

WORK for over two million men for a period of one month could be provided by the National Forests of the country, according to figures compiled by Secretary Arthur M. Hyde of the Department of Agriculture, and submitted to Senator Robert W. Wagner, of New York, on January 9. The Secretary's appraisal of the work possibilities of the forests under his jurisdiction is made in terms of man-years of 300 days and shows a volume of serviceable work to be done totalling 135,000 man-years. Expressed in terms of man-months of twenty-five eight-hour days, this amounts to over 1,600,000 months of work. If a six hour day be substituted, as is the practice in forest work camps in California, the total employment possibilities exceed 2,000,000 man-months. To open this storehouse of employment, the Secretary estimates, would call for an expenditure of \$150,000,000, assuming wages of \$3.60 a day in the West and \$2.40 a day in the East.

Secretary Hyde's estimate of the work available in the National Forests was prepared at the special request of Senator Wagner, co-author with Speaker Garner of the Emergency Relief and Construction Act, passed by Congress at its last session. Senator Wagner states that he requested the information because he desires concise and complete information in regard to the employment possibilities of the National Forests as a basis for consideration of a new federal construction program to relieve unemployment.

As submitted to Senator Wagner, the Secretary's estimate designates work possibilities on the National Forests as of two classes. Class "A" consists of projects or activities for which appropriations would normally be made, including

the construction of telephone lines, roads, trails, landing fields, fire breaks, lookout towers and observatories, other structures for fire protection, range fences, water developments, corrals, driveways, public camp improvements, reforestation or tree planting, insect and tree disease control and other range and forest cultural work. This work, the Secretary states, would not necessarily be classified as self-liquidating in the strict business sense that there would be created an income sufficient to pay off the costs incurred, but its performance is of sufficient value that the Forest Service would be justified to carry the costs on its record as an investment.

Class "B" work includes activities of a similar character but of less importance and therefore of low priority. It would include also activities to control erosion, to eradicate poisonous plants and rodents and other miscellaneous work that will tend to improve the National Forests. Since this class of work is not of high urgency at the present time the Secretary says the Forest Service would be unwilling to assume the cost of its performance as a charge against capital investment.

The Secretary's estimate shows separately by states the employment possibilities within the National Forests in the table printed on

	EMPLOYMENT POSSIBILITIES OF NATIONAL FORESTS			TOTAL COST (b)	
	—Direct Labor—				
	MAN YEARS	A Work	B Work	Total Man Years	TOTAL COST (b)
Alabama	269	102	371		\$344,329
Alaska	250	250	500		720,000
Arizona	2,985	463	3,448		5,553,889
Arkansas	2,468	586	3,054		2,798,503
California	15,239	11,121	26,360		36,248,000
Colorado	2,951	639	3,590		5,696,978
Florida	422	125	547		511,399
Georgia	687	187	874		789,798
Idaho	7,851	6,061	13,912		21,503,000
Illinois	(a) (417)	—	(417)		(550,000)
Indiana	4	—	4		7,295
Louisiana	12	—	12		8,640
Maine	116	—	116		84,058
Michigan	(a) (500)	—	(500)		(700,000)
Minnesota	2,372	1	2,373		2,038,124
Mississippi	1,634	259	1,893		1,763,999
Montana	458	38	496		459,876
Montana	5,726	2,900	8,626		17,067,950
Nebraska	27	—	27		62,770
Nevada	211	51	262		399,860
New Hampshire	439	258	697		714,953
New Jersey	2	—	2		1,920
New Mexico	3,247	880	4,127		6,668,858
New York	(a) (417)	—	(417)		(550,000)
North Carolina	1,507	218	1,725		1,597,169
North Dakota	1	—	1		1,090
Oklahoma	130	3	133		326,529
Oregon	9,485	3,906	13,391		17,127,755
Pennsylvania	353	654	1,007		426,967
Puerto Rico	33	—	33		26,000
South Carolina	2	—	2		2,440
South Dakota	641	2,461	3,102		3,749,959
Tennessee	484	191	675		630,266
Utah	1,396	585	1,981		3,102,990
Vermont	86	104	190		183,683
Virginia	1,421	583	2,004		1,846,596
Washington	6,163	2,298	8,461		10,710,130
West Virginia	631	1,393	2,024		1,895,626
Wisconsin	615	8	623		611,017
Wyoming	1,186	417	1,603		2,452,618
Total	72,838	36,742	109,580		\$149,935,034
Indirect Labor	20,000	5,500	25,500	Indirect Costs included above	

(a) Indirect.

(b) Based on a "going wage" placed at \$3.60 in the west and \$2.40 per day in the east, plus all other costs. ("Man year" equals 300 8-hour days.)

this page. It shows that the Class "A" work could provide employment for 72,838 men for one year, and Class "B" work could employ 36,742 men for a similar period. The employment of these men, the Secretary estimates, would create a market for materials, food and equipment, that would make work for 25,500 additional men and thus provide a project that at a cost of \$150,000,000 would yield year long employment to 135,000 (Continuing on page 89)

# THROUGH THE LENS



Photograph by S. A. Bakalyar

"Through Spanish Moss"

## PRIZE WINNING AMATEUR PHOTOGRAPHS

THE first of the prize winning photographs submitted in 1932 by the readers of "Through the Lens" have been announced by the editors of AMERICAN FORESTS. The contest, which closed at midnight, December 31, was conducted as a medium for proper recognition of improved and unusual work of amateur photographers who have been benefited by the twenty-four short lessons in outdoor photography published during the past two years. At the same time it is hoped that the publication of outstanding pictures will enable the amateurs to compare and exchange experiences, problems and results.

More than 1,300 pictures were entered in the contest, representing the work of nearly 500 photographers, all amateurs. Every state in the country, with the exception of North Dakota, was represented, as were several sections of Canada and Mexico. The subject matter included individual trees, tree groups, massed forests, wild life, camping, fishing, hunting and other forms of outdoor recreation, and personalities. In the final classification forty per cent of the pictures were rated as good amateur photography, with about ten per cent rated as excellent. The remaining were classified as ordinary. About twenty per cent of the total were suitable for reproduction.

The first two photographs to receive recognition, and to

win awards of \$5 each, are reproduced in this issue. They are "Through Spanish Moss" by S. A. Bakalyar, 600 East Euclid Street, Des Moines, Iowa, above, and "Forest Camp in Winter" by Ralph Cooke, of Glacier, Washington, on page 50.

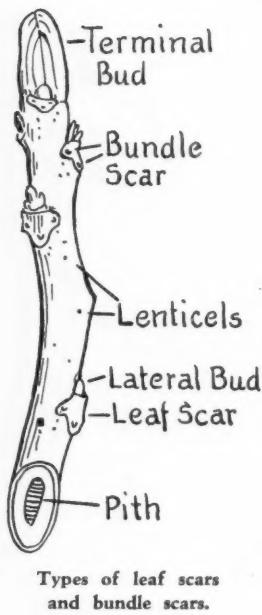
Both photographs were made with small hand cameras and average equipment, and both have been greatly enlarged for reproduction, a severe test for any picture. The original of Mr. Bakalyar's "Through Spanish Moss" is five inches long and three inches wide, with dull finish, while "Forest Camp in Winter" is but four inches long and two and one half inches wide, with glossy finish. Both have defects in composition, but the whole effect of each is above the ordinary, equal to a great many professional pictures. Readers are invited to analyze the pictures and exchange notes with the photographers.

During the publication of the prize winning photographs, which will continue monthly through the June issue, the short lessons in outdoor photography will be suspended. Service to the readers, however, will be maintained through the medium of "Camera Queries" — a column which will start in the March number. Send in your question or questions, for there is no limit to the number you may submit, and they will be answered in this department by the outstanding photographers of outdoor subjects in the country.

# A FOREST PAGE FOR BOYS AND GIRLS

Conducted by WAKELIN MCNEEL

## WHAT TWIG IS THIS?



Types of leaf scars and bundle scars.

TO IDENTIFY trees by their leaves is one thing; to identify them by their twigs is quite another. A boy (or girl) does not find it much of a trick to learn to recognize by the leaves the common trees of his neighborhood, at least after enthusiasm has been acquired for the task. Yet I have not found a boy who can recognize ten forest trees by their flowers alone. Tree flowers are so inconspicuous in most cases, and are here for so short a time that very little attention is given them. Seeds and fruit are even more characteristic than the leaves and provide a ready means of identification. But when the trees are stripped like a wrestler for the long encounter with winter blasts and have neither leaves, blossoms nor fruit, then quickness and accuracy in identification is something "to stick the chest out

American white ash, chestnut, black walnut, cottonwood and honey locust. There are trees that can be grouped because of their heavier foliage and low branching habit, such as the red and hard maples, basswood, beech, horse-chestnut, buckeye, tulip tree and many of the oaks. When grown in forests these trees lose this characteristic compact growth and produce trunks that are straight and high-branched.

As one approaches a tree in winter the bark becomes a means of identification. In this particular we have a wide spread of differences, from the tight fitting birch that peels laterally to the gray shaggy bark of the Shagbark hickory with the long narrow irregular strips of bark that appear to hang loosely along the trunk. The ash with diamond-shaped fissures makes a good medium, while the sycamore that peels as though it had a bad case of measles and is blotched from ground to tip, is the most distinctive. Looking into the crowns we find equally distinctive differences in the size and arrangement of branches—the ashes, walnuts, hickories, buckeyes and horse-chestnut with stout branches graduating in size to the birches and hop hornbeams, the latter having the finest twigs of all and most delicately interlaced. Each tree has characteristics of identity that impress themselves upon the memory of the careful observer.

But there is yet a more interesting way to learn to know trees in winter, and if you wish to make this month one of real adventure, you can do so by learning to identify the important trees by marks that slip by most people unobserved—the leaf scars on twigs, the shape and color of the pith, the buds and the size and shape of the twigs. Leaf scars mark the place of attachment of the leaf to the twig and become visible after the leaf has fallen. They differ greatly in size and shape and offer some of the most distinguishing winter characters. In the scars are some small marks called fibro-vascular bundles, or just plain bundle scars. The woody strands that connected the twig with the veins of the leaf left these marks in breaking off. The arrangement of these bundle scars often give the leaf scar the appearance of a monkey face, or remind us of pictures we see of faces on gargoyles, especially when the scar is topped by a pubescence, as is sometimes the case. Anyone who studies trees in winter con-

about." Trees have characteristic outlines as we see them against the sky or landscape. One of our favorite games while on winter hikes is having each member of the party guess the name of a tree that stands out alone, then each offers arguments in support while walking to examine the tree at close quarters to ascertain who is right. I like to have a pocketful of candy beans on such hikes and give to each one who guesses the genus two beans, and six to the one who guesses the species. The one who has the largest number of beans at the end of the hike gets what remains in the pocket.

The most graceful of all trees is the American elm with its tall crown spreading like a feather duster. Other trees with this high branching habit are the silver maple, sycamore,



High branching open foliage type exemplified best in white elm



Erect; accent tree, breaks monotonous horizontal lines; lombardy poplar good example



Small growing trees with rugged appearance, found in sumacs and hawthorns



Trees with drooping habits, usually found in wet places; willows, live oaks good examples



Trees with low branching habit and compact growth; beech, hard maples good examples

dition learns to know that the number and arrangement of these bundle scars are always the same in any given species.

The pith is the central part of the stem surrounded by the woody cylinder. While this part generally lacks variety, usually it is round, white and uniform in texture. Some trees, however, present interesting variations. A cross section of an alder shows the pith to be triangular; star-shaped in the oaks, chestnut and aspens; lemon-shaped in the ash; brown and chambered in the walnuts; white and chambered in the sour gum; brown in the striped and mountain maples

large and small, brown, gray, red, green, black and yellow; hairy, sticky, smooth and rough; some with stipule scars, some without; one with bud hidden in stem, one with lopsided bud. So many different descriptions in case of buds that it might be well to put them in some order, make a key for the identification of twigs of important trees. But first let me drop a helpful suggestion to those of you who wish to learn the twigs. Collect a good twig specimen of every important deciduous tree in your locality. The twigs should be about five inches in length. Bevel the cut ends so as to show



and sumac; red in the coffee tree; and green in the service berry.

Scattered along the twigs are tiny scars, very prominent in case of some trees, the cherry for example. These are called lenticels, the breathing holes for the twig, and are especially important during winter when the tree is lacking in its main breathing organs, the leaves. The young stem lenticels are similar in structure to the stomata, or breathing holes, in the leaves, but they become crack-like scars in older stems. Because they differ in number, arrangement and color, you will soon find in lenticels a means of identifying many twigs.

The buds are the resting end or branch of a stem that upon awakening elongate into stems or become leaves and flowers. Before trees close down the shutters for the long winter nap, the buds are grown all ready for the grand opening in the spring. If you wish to get an enlarged view of the inside of a bud examine the inside of a cabbage the next time your mother cuts one open. Buds differ with every species of tree, and so we find in them a distinctive means of winter identification. We find them round and obtuse, ovate and pointed, imbricated and naked, one scale covering the bud in some cases and sometimes it takes five or more. We find them

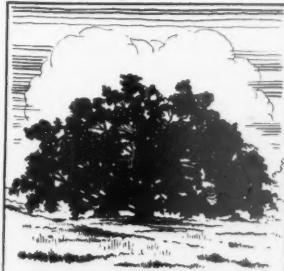
the shape and color of the pith, then mount them on a heavy piece of composition board such as Cornell board, making sure that the cut ends are even across the board. Let the tips be uneven if need be, and far enough apart to allow for the name, both common and botanical, below each twig. The twigs can be held in place by glue or by two narrow strips of adhesive tape, one near each end. You will make discoveries in the construction of this collection that will bring to you moments of exaltation. You may be compelled to climb, and the bole of the tree may curl the gristle of your sternum, but you will be learning, be making an old adventure new.

Now for the twig key by which to identify a few of the important trees.

Of the buds in pairs on opposite sides of the twig, the ash, horse-chestnut and maples are outstanding examples. With the ash, however, the buds are broader than they are long, and covered with three pairs of scales, from dark brown to black. The leaf scars are half round, while many of the bundle scars are in "C" shaped line. The twigs are stout, and the maples, the buds are longer than broad, with bundle scars in series of three. The (Continuing on page 93)

## FAMOUS TREES EVERY BOY AND GIRL SHOULD KNOW

### No. 4---THE LOGAN ELM



THE LOGAN ELM, ONE OF THE MOST FAMOUS OF AMERICAN TREES, STANDS SEVEN MILES SOUTH OF CIRCLEVILLE, OHIO. UNDER ITS BRANCHES, IN 1774, LOGAN, CHIEF OF THE MINGOES, MADE A PLEA FOR JUSTICE WHICH HAS BEEN COMPARED TO THE BEST ORATORY OF CICERO AND DEMOSTHENES.



NAMED FOR JAMES LOGAN, A WHITE SETTLER ADMIRED BY THE INDIANS, THE CHIEF OF THE MINGOES, WHOSE NATIVE NAME WAS TAH-GAH-JUTE, WAS GREATLY RESPECTED BY THE SETTLERS, AND WAS KNOWN AS THE FRIEND OF THE WHITE MAN. EXCEPT THAT HE WAS THE SON OF SHIKELLAMY, SAID TO BE A WHITE MAN, LITTLE IS KNOWN OF LOGAN'S EARLY LIFE.



IN 1774, WITH THE REVOLUTION APPROACHING, AND MORE SETTLERS ENCROACHING ON INDIAN TERRITORY, BAD FEELING BETWEEN THE WHITES AND THE INDIANS BROKE OUT. LOGAN REMAINED FRIENDLY UNTIL HIS BROTHER AND SISTER WERE MERCILESSLY SLAIN. THEN HE CALLED FOR REVENGE AND BLOODY TIMES FOLLOWED. THE INDIANS WERE FINALLY BROUGHT TO SUBMISSION, BUT LOGAN REFUSED TO ATTEND THE PEACE PARLEY THAT FOLLOWED.



A WHITE SCOUT, JOHN GIBSON, WAS SENT TO SEARCH FOR HIM AND FOUND HIM UNDER THE LARGE ELM. LOGAN POURED FORTH HIS IMPASSIONED FEELINGS WITH A BURST OF ORATORY THAT WILL LIVE FOR ALL TIME, ENDING WITH THE FAMILIAR, WHO IS THERE TO MOURN FOR LOGAN? NOT ONE!"

# AMERICAN ELM

[*ULMUS AMERICANA*]

THE dignified and courtly American elm is characteristic of the northeastern landscape and has been planted over most of the United States. Typically vase shaped, it sometimes develops heavy far reaching limbs after the manner of the oaks.

Elm belongs to the family "Urticaceae"—the family of the nettle. The genus *Ulmus*, which is the ancient Latin name for elm, has sixteen species distributed in the north temperate countries of the world. Six elms are native to eastern North America, with American Elm the largest and most important. None are native west of the Rocky Mountains, but they grow successfully in all western states.

American Elm is known as white elm, and sometimes as water or soft elm. It grows naturally in river bottoms and on low fertile hills, from southern Newfoundland to central



In summer the elm combines grace and dignity with courtliness, while in winter it reveals the strength of its limbs and branches above a sturdy trunk.

Florida, and west beyond the northern shores of Lake Superior to the Turtle Mountains of North Dakota, thence up the water courses to the base of the northern Rockies. Its western limits are confined to stream banks in western Nebraska, central Kansas and Oklahoma, through central Texas to the Gulf of Mexico.

The main trunk of open grown trees divides at ten or twenty feet to form a broad crown, while in the forest trunk lengths of thirty to sixty feet are attained. Trees two to four feet in diameter and eighty to one hundred feet high are common, but elms eight to eleven feet in diameter and 120 to 140 feet high have been known.

The lopsided, double toothed, alternately placed, sharp pointed leaves are two to five inches long and one to three inches wide. Evenly spaced, parallel veins extend from the midrib to the saw tooth edges. The upper surface is slightly rough while the under surface is softly hairy. In early autumn the leaves turn golden yellow, then sere and brown and quickly leave the tree bare.

At the base of each short petiole or leaf stem is a blunt pointed, smooth, slightly flattened bud, which appears to be at one side of a semi-circular leaf scar after the leaves drop. Before the leaves are fully open, in May or June, the seeds ripen. They are flat, entirely surrounded by a broad, slightly hairy, papery wing, which rarely exceeds three-quarters of an inch in diameter. If planted immediately, most of the seed will germinate in a few days, but some may lay dormant until spring. Each seed develops from an inconspicuous light green perfect blossom with red stamens. They hang in clusters and are produced before the leaves, when the tree appears as if covered with a purple glow.

The wood is light brown, heavy, hard, tough, so cross grained as to be difficult to split, and weighs thirty-three to thirty-five pounds to the cubic foot when air dry. It has a broad area of lighter colored sapwood. Because of its toughness it is used for the hubs of wheels and for hoops and staves in slack cooperage, for ship building, furniture, flooring, sporting goods, boxes and crates. Relatively easy to season, it works fairly well, and while it can be scoured to a clean whiteness, does not polish easily. The Iroquois Indians of western New York used the bark for canoes and twisted it into ropes.

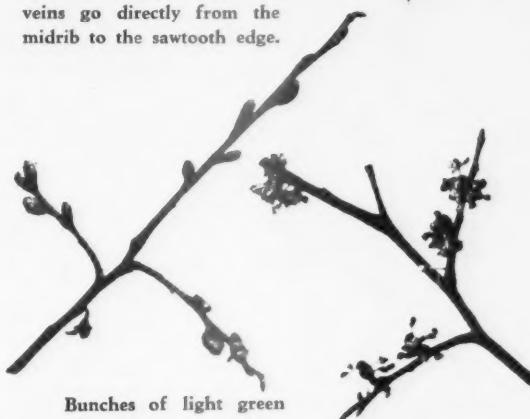
In 1930 the total cut of all elm lumber in the United States was 109,999,000 board feet as compared with 175,833,000 board feet in 1929. Nearly one-half of the 1930 cut was produced in Wisconsin and Michigan.

American Elm grows from seed, sprouts readily from the stump and from root ends. Horticultural types may be reproduced by cuttings, buds and grafts. Preferring rich, deep, well drained loam, it will grow in almost any soil. The vigorous shallow, fibrous root system permits comparatively easy transplanting until the trees reach a large size. The roots reach out long distances for water, occasionally entering and clogging drain pipes whose joints are not thoroughly closed.

Of all elm pests, the elm leaf beetle is chief. By eating the leaves this beetle and its larvae occasionally kill trees, but like other insect pests it can be controlled. Perhaps more to be feared is the newly reported Dutch



One side of each leaf is larger than the other, and parallel veins go directly from the midrib to the sawtooth edge.

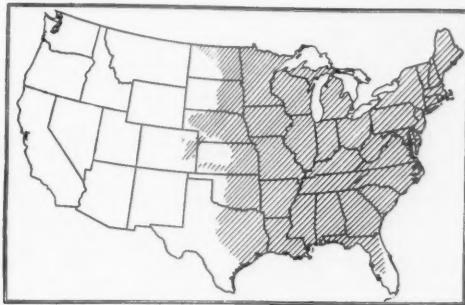


Bunches of light green blossoms appear from last year's buds ahead of the new leaves.



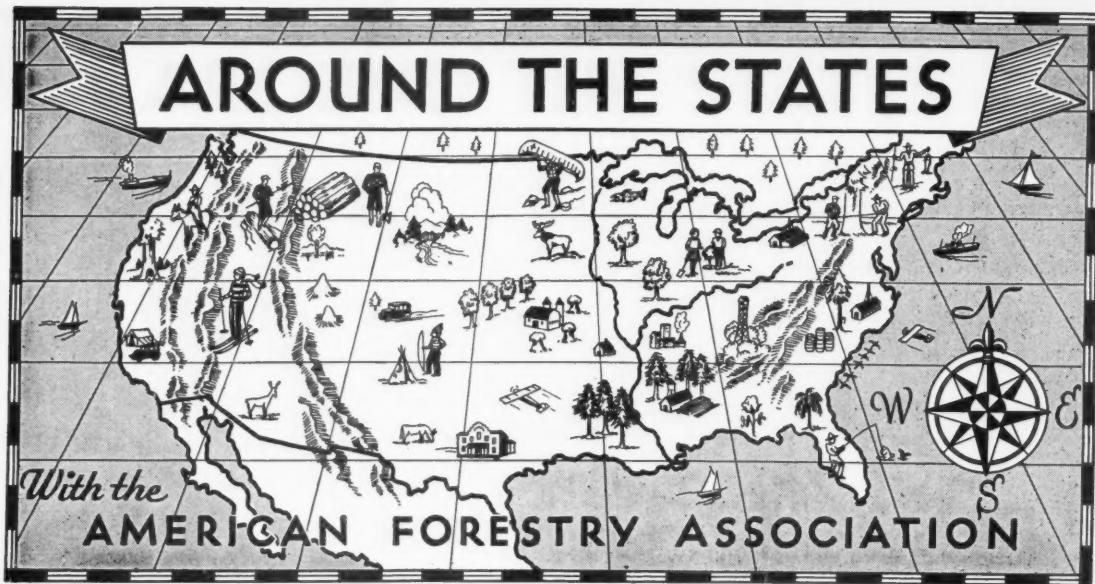
Field Museum

The dark, ash-gray bark of the main trunk is one to one and a half inches thick, with interlacing flaky ridges.



Natural range of American Elm within the United States.

Elm Disease for which no cure has been discovered. In spite of enemies, however, American Elm is a popular shade tree and its ability to reproduce under forest conditions encourages its use in hardwood forest management.



## Pederson Named State Forester of Virginia; Jones Educational Director

Fred C. Pederson, in charge of fire protection work for the Virginia State Forest Service, has been named State Forester of Virginia, to succeed Chapin Jones, who becomes Director of Forestry Education and Research. The announcement was made by Governor Pollard early in January, and brings to a close several months of controversy which followed the request by the Commission of Conservation that Mr. Jones resign. The governor has had the case under consideration for more than a month.

Mr. Pederson received his forestry education at Syracuse University. During the World War he served in France with the Tenth Engineers. Except for a short period when he was connected with the lumber industry he has served continuously with the State Forest Service, as district forester and later in charge of fire protection work.

## Hoover Accepts Analostan Island

President Herbert Hoover late in December formally accepted the deed of Analostan Island, in the Potomac River, at Washington, D. C., which was acquired by the Roosevelt Memorial Association as a memorial to the late Theodore Roosevelt. The ceremony of presentation was held in the famous East Room of the White House in the presence of a distinguished gathering, among them being Mrs. Alice Roosevelt Longworth, daughter of the late president, Secretary of State Stimson, and General John J. Pershing.

The presentation was made by James R. Garfield, president of the Memorial Association, and Secretary of the Interior under Roosevelt.

"The fame of President Theodore Roosevelt has grown in luster and stature as the years have passed," the President said. "Time constantly brings his essential greatness into clearer and clearer outline. His accomplishments will bulk large in the pages of history, but equally he will be remembered for his personality and his character. His was a virile energy, and abundant optimism and courage, a greatness of vision and a faith in his country's future which knew no boundaries of limiting doubts. These qualities, inherent within him, and his strength were unconsciously developed in communion with Nature. He lived much in the open; he loved the mountains, the woods, the streams and the sea. From them he gained

a spaciousness of outlook which permanently endear him to his countrymen.

"There is thus an especial appropriateness in this memorial which you are giving to the Nation. This wooded island, set in the midst of the Potomac, is forever within view of the Lincoln Memorial, the Washington Monument, the Capitol and the White House. You have wisely chosen a bit of nature within the boundaries



Samuel N. Spring

daries of this city which he loved and where he rendered such noble service.

"As years go by the Nation will add to its usefulness and its appropriateness as a memorial to so great a President. In the name of the people of the United States and on behalf of the Federal Government, I accept this gift, and tender to you and to the thousands of citizens whose generosity made it possible, their warmest commendation and grateful thanks. In consummation of these purposes, I direct that Analostan Island shall hereafter be known as Theodore Roosevelt Island, and dedicated to the Nation."

## Samuel N. Spring Named Dean of Forestry at Syracuse

The appointment of Samuel N. Spring as Dean of the New York State College of Forestry, at Syracuse, and Clyde Leavitt as acting assistant Dean has been announced.

Mr. Spring succeeds Dr. Hugh P. Baker who on February 1 will assume the presidency of Massachusetts State College at Amherst. Mr. Leavitt, who takes up the duties of the position vacated by Mr. Spring, has been Acting Director of Forest Research at the college.

Professor Spring has been assistant Dean of the college since February, 1932, and chairman of the committee on graduate curriculum which reorganized the courses at the College of Forestry. He has made an exhaustive study of the curriculum looking toward the better coordination and effectiveness of training.

The new Dean received the degrees of B.A. and M.F. at Yale in 1898 and 1903 respectively. He served with the United States Forest Service before he organized the forestry school at the University of Maine.

In 1905 he returned to the Forest Service as a forest assistant and was soon promoted to chief of the Office of Forest Extension which dealt with reforestation in the United States. From 1909 until 1912 he was State Forester of Connecticut and forester of the Agricultural Experiment Station of that State.

Professor Spring was special lecturer in forest economics at the Yale School of Forestry during 1910 and 1912 and again in 1917; he gave courses in silviculture at the University of Missouri in 1919. He traveled and studied in Europe in 1927, paying particular attention to problems of silviculture, a branch of forestry in which he is a specialist.

Mr. Leavitt, a Spanish-American War veteran, graduated from Michigan with the degrees of B.A. in 1901 and M.S. in 1904. From 1904 to 1912 he was successively forest assistant, United States Forest Service, Chief of Section of National Forest Boundaries, assistant chief and chief of the office of organization, regional forester at Ogden, Utah, and assistant forester at Washington, D. C.

In 1912 he became Chief Forester for the Commission of Conservation of Canada and Chief of the Fire Inspection Department, Board of Railway Commissioners. In 1920 he was a delegate to the British Empire Forestry Conference in London after which he toured and studied the forests of England, Scotland, Wales and France.

## Wild Life Editor Warns Against Concessions to Sheepmen

Forest and wild life conservation is threatened by further concessions to stock and sheep growers of the west, Harry McGuire, Editor of the *Outdoor Life* magazine, told the American Game Conference in New York last month.

"The average number of sheep grazed each year on National Forests varies," Mr. McGuire declared, "between 6 and 7 millions. For 1932 the grazing fees on National Forests have been reduced 50 per cent, so that the average fee for sheep this year was 2½ cents a head per month for an average season of 3½ months. The average sheepman pays—or is supposed to pay—less than 8 cents a head for the damage his sheep does to your forest lands during a whole summer. Do you think that that half million dollars the Forest Service will try to collect from the sheepmen even begins to compensate the sportsmen of the country for the loss in deer, elk and mountain sheep which is inevitable in a country where the grass has been grazed away by sheep; do you think it will begin to compensate the Forest Service for its supervisory operations where sheep are grazed; do you think it will compensate the sheep farmer of the Middle West and other regions who pitifully tries and fails to meet the competition of sheep raised, we might almost say, at government expense? And last—and most important—do you think that half

a million dollars begins to compensate the general public for what it has suffered year after year from floods caused by erosion, in turn caused by overgrazing by these sheep?

"To many conservationists today it seems evident that the cause of wild life conservation and the causes of national economy and of general conservation of our forest resources can only be harmed by further concessions to stock and sheep growers of the West.

"Last spring when the fees for grazing live stock in National Forests were cut by 50 per cent, Secretary of Agriculture Hyde stated that this was an emergency relief measure and must not be construed as a change in the Forest Service's established policies. Further leniency was shown the stock interests by allowing their 1932 payment to be deferred until December 1st. Conservationists held their peace in the matter, feeling that as long as Secretary Hyde's actions set no precedent and it was distinctly an emergency relief measure they need not feel that the constant efforts of stockmen to sponge on the public would succeed—especially in view of the fact that we understood that both Mr. Hyde personally and the Forest Service had originally opposed the reduction and had submitted to it only under strong political pressure brought to bear by Western senators upon President Hoover."

## Foresters Meet in West

More than two hundred members of the Society of American Foresters met at San Francisco, California, December 14, 15 and 16, to discuss the present day forest situation and to lay down plans for constructive progress. The first two days were given to discussions of problems affecting forestry development, while the meeting concluded with a business meeting and professional discussions.

The chief speaker of the meeting was Henry S. Graves, Dean of the Yale Forest School, who reviewed the major forest problems of the nation and set forth the task the foresters have ahead of them.

Mr. Graves declared that the character of land ownership in the United States is one of the most important fundamental factors bearing upon the present crisis in the forest industries. "It is point of weakness in the foundation of our industrial structure," he said, "and constitutes one of the greatest obstacles in building a sound system of forestry. It is a primary element in the instability of production, in unrestrained and often unintelligent competition, in uneconomic development of timber in given localities, in retarding uniform practices and procedures in the industry, and in enhancing the difficulties of protection and forestry practice."

In remedying the situation, Mr. Graves expressed the belief that control of forest protection will have to be carried to a point where restrictions may be applied by the public with the view to insuring sustained yields of forest products in given regions and where feasible on individual properties. These restrictions, he said, would be expressed in measures to prevent premature removal of timber or of growing trees which ought to be left standing in the woods. "In the long run," he declared, "it is the principle of sustained yield that will furnish the key to stabilized production. It will not be really effective, however, unless applied to all of the forests in a given economic region. In short, some form of public control of private forests is likely to be brought about

through the sheer necessity to stabilize industry and to assure the continuance of industrial activities in the several states or regions as well as through the necessity to provide national needs of products from the forest."

Mr. Graves' remarks formed the keynote address of the meeting. In discussing the critical questions now confronting forestry, Mr. Graves said that in his judgment the effect of the sale of public timber upon over-production has been greatly exaggerated. He expressed the belief that the time has arrived for the Government where it owns large areas of National Forests to contribute to the local counties more nearly in accord with the plan of taxing private properties. He favored a larger program of federal acquisition of cut-over lands, but declared that government purchase of private matured timber to relieve owners is impracticable. He emphasized the importance of the problem of forest taxation, but pointed out that it is only one of the burdens that are causing economic disturbance among the forest industries. In speaking of the heavy trend of tax delinquent cut-over lands to states and counties, Mr. Graves said:

"The policy of the industry in acquiring and managing land has been one of liquidation and not one of permanent ownership. There has been abundant testimony that most lumber manufacturers are not interested in holding land for growing timber, regarding 'reforestation' as a public function. Mr. Compton says that the industry has much more timber than it can afford to hold under present conditions. It begins to look as if industrial ownership is failing so far as cut-over lands are concerned and that it must have public assistance in carrying the so-called reserve timber supplies; and further that the ownership of even the timber land which will be cut over in the next two decades is temporary, extending only through the period of liquidation. If this is really the case let the fact be fully recognized, for it is of momentous significance in building a permanent land use policy for the nation."



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#### Service Department

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## "A THOUSAND BUSHELS IS A LOT OF WALNUTS"

"A thousand bushels is a lot of walnuts," said the Boy Scout as he regarded the major mounds stacked before the Pennsylvania monument on Gettysburg Battlefield one day in November.

Very likely it is the largest quantity of walnuts ever collected in one locality and brought together at one time, although it represents only one-half of the total gathered during the past nutting season under the direction of the National Nut Tree Planting Council. Through the efforts of the sponsors of the nation-wide

can history are brought to mind when the sources of these seeds are listed. They include the homes of three Presidents—Andrew Jackson, James K. Polk, and Andrew Johnson; four battlefields—King's Mountain, Franklin, Stones River, and Nashville; and the Treaty Oak in Cherokee Park. The homes of two governors and a senator were visited by the boys who combined lessons in conservation and state history. Two North Carolina shrines were the source of seeds that will grow into trees to memorialize them—Mecklenburg



The presentation at Gettysburg Battlefield of 1017 bushels of walnuts

nut tree planting program, more than a million seeds have been gathered.

Boy Scout troops in sections of the country where nut trees flourish fell to with a will and have secured the seeds that will provide the way for perpetuating America's great heritage. Boys of the York-Adams County Area in Pennsylvania outdid their record of 1931 in gathering seeds from the laden trees at Gettysburg to supply with walnut trees farms, public parks, scout camps, and school yards of the United States. They are rivalled by the Shenandoah Area Scouts, whose records are not yet complete, but who turned over to the National Nut Tree Planting Council in December nearly 500 bushels. Because of the favorable weather the boys in that locality are still gathering and shipping in nuts.

Although twenty-five bushels was a record collection for one scout last year, this season has seen it more than trebled! Harry Elbert, of Winchester, Virginia, gathered ninety bushels, and Clyde Sowers, last year's champion, brought in seventy-five bushels. More than thirty scouts have each gathered a minimum of twenty-five bushels of nuts from this year's abundant crop.

Vicksburg, Mississippi, scouts under the leadership of Scout Executive H. F. Cote, of the Kickapoo Area Council, gathered forty bushels of walnuts on the famous battlefield that encircles the city, finding them between the Old Union and Confederate lines and even in the trenches. Nashville, Tennessee, scouts directed by Mr. W. J. Anderson, sent approximately 5,000 seeds to Washington for distribution. Dramatic and colorful pages of Ameri-

County where the Declaration of Independence of that name was signed on May 20, 1775, and the home of Daniel Boone in the forks of the Yadkin River, in Rowan County.

Washington, D. C., scouts gathered walnuts from trees in the National Capital, one troop securing six bushels from trees near the Lincoln Memorial. The Apache Patrol of Troop 52 led by Melvin Williams and Lester Lewis, and the troops directed by Scout Commissioner J. S. Hawley, gathered seeds in the city and in Chevy Chase.

The thrilling adventure of Tom Sawyer and Becky Thatcher when they were lost in the cave and discovered Indian Joe, will be memorialized by the lot of seeds sent by Hannibal, Missouri, scouts who gathered them near the mouth of the cave described in the story of Mark Twain. Scout Executive Carlton Hyde secured permission from the owner of the cave for the scouts to go nutting there.

Another place that has been made famous in story is the home of Barbara Fritchie in Frederick, Maryland. City Forester C. Cyril Klein and Scout Executive Henry R. Coates directed scouts in gathering walnuts from a tree near the grave of the woman who was a Civil War heroine.

The St. Croix River Boy Scout camps yielded butternuts to the boys under the supervision of Scout Executive F. R. Neibel, of St. Paul. The boys like to tell the story of the days when Chippewa Indians camped there and fought a terrible battle with the Sioux, and they say that this was also the site of a lumberjacks' camp in the days when

logging was in its prime in Minnesota.

Seeds from the birthplace of Thomas Edison, Milan, Ohio, were gathered by scouts of Sandusky under the leadership of Scout Executive G. E. Chronic. Three Fairlee, Vermont, boys—J. H. Foote, Harvard Alger, and Henry Bedor—gathered beechnuts, butternuts, and walnuts on grounds associated with their state history. Scoutmaster C. W. Robinson and Troop 14, of Hoosick Falls, New York, sent hickories gathered on the battlefield of Bennington, Vermont.

As in former years others have cooperated with the scouts in their efforts to secure nut seeds. The D. A. R. chapter at Mount Vernon, Ohio, sent through Mrs. Mame B. Gotshall, seeds gathered at the home of Daniel Emmett, the author of "Dixie." Mrs. Grace R. Sweeney, of the Rock Island, Illinois, D. A. R., sent several lots of nuts associated with various historic grounds. Miss Roberta Scanlon again sent hickories from the home in West Virginia of George Washington's brother.

The Mount Vernon and Arlington trees were as usual the source of seeds which will be distributed for nut tree planting. Daniel Carter Beard led District of Columbia, Maryland, Virginia, and Pennsylvania Scouts to George Washington's home to secure the season's crop of walnuts.

The National Nut Tree Planting Council set as its goal the planting of a million nut trees with traditions during one year. To accomplish this it was first necessary to secure seeds in large quantities from historic grounds. The distribution of the seeds has already begun and will be completed during the spring when the program for 1932 will be completed. Some of the seeds will be held in Washington to be planted in a nursery in order that small trees will be available for planting on special occasions and in historical groves or on other public grounds. Judging from the response to this part of the program many city and town public parks will possess groves of trees which carry in themselves American traditions. Great men and women and scenes associated with history will be memorialized in living beauty.

The collection during the fall of 1932 of approximately 2,000 bushels of nut seeds by American youth is "a lot of nuts" and is the source of a million trees that will bring beauty, crops, and fine timber, and remind generations to come of the traditions cherished today.

### Tree Planting Aids Unemployed in Hawaii

The Territory of Hawaii has turned to tree planting as one means of meeting its unemployment situation. C. S. Judd, territorial forester, recently issued a statement that "the Territory of Hawaii is in accord with the belief that forests and forest work offer an opportunity for relieving some of the present unemployment difficulties and in acting on this belief the Territory is now employing men in destitute circumstances in planting trees on the watersheds back of Honolulu. Some of this planting consists of preparing holes for the sandalwood trees started from seed imported from India, which will be set out in December of this year, as soon as the winter rains come. There are 1,500 of such trees now in our nursery for this planting. The other planting consists of reforesting open areas in Nuuanu Valley above the reservoirs which contribute a part of the supply of water to the city of Honolulu."

### Society of Arborists Formed

Popular interest in trees and tree care has resulted in the formation of the American Society of Arborists, an organization of professional arborists. The society was founded at a meeting held recently at the University of Rochester, coincidental with the National Shade Tree Conference.

The purpose of the new organization is to stimulate interest in trees, promote effective means for the protection of tree life, disseminate information on trees and to maintain and raise the standards of the profession. Charles F. Irish, of Cleveland, was elected president, while O. W. Spicer, of Stamford, Connecticut, was named vice-president. Norman Armstrong, of White Plains, New York, was voted secretary-treasurer, with R. M. Weakley, of Warren, Pennsylvania, and Vance I. Shield, of St. Louis, forming the executive committee.

### Connecticut Association to Meet

The Annual Meeting of the Connecticut Forest and Park Association will be held January 28 at the Yale School of Forestry, at New Haven. The principal subjects to be discussed are "State Forests in Relation to Unemployment Relief," "Marketing of Forest Projects" and "Forest Trails."

### Forestry Plans for Southeast

A forestry program designed to meet the needs of the eight southeastern states has been adopted by the Southeastern Council, it has been announced by Colonel J. W. Harrelson, director of the North Carolina State Department of Conservation and Development. The program, he said, covers many present-day problems. It follows in full:

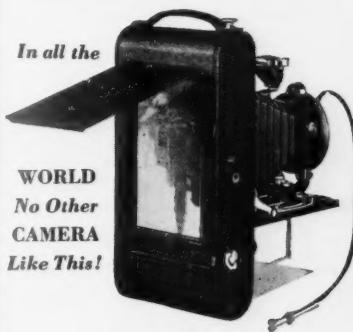
1. Encouragement of teaching forestry in public schools and colleges and the development of an appreciation on the part of the general public of the benefits of forest conservation.
2. Speedy extension of each state's forest fire prevention and control system to include all forest lands needing systematic protection.
3. Promotion of comprehensive economic surveys to provide for land-use zoning to designate areas best suited to agricultural development, private forestry and public forests.
4. Development of a coordinated system of publicly owned forests, national, state and local, to be used for timber production, demonstration of improved timber growing and fire control methods, wild life conservation, public hunting grounds and recreation.
5. Equalization of taxes so that forest property will not carry a greater burden, in proportion to its value, than do other classes of property.
6. State-wide assistance to landowners in the handling of their forestry problems.
7. Encouragement of reforestation of idle and eroding lands by maintaining State forest tree nurseries to provide planting stock.
8. Extension of investigations by Federal forest experiment stations and suitable state research agencies upon the various subjects fundamental to economic handling of forest lands.
9. Speedy extension to the entire southeast of a survey inaugurated under the McNary-Sweeney Act to supply information now woefully lacking as to the present quantity and condition of standing timber, its rate of growth and rate of depletion, and market demands for the several types of timber.
10. Recognition by the Federal Government of landowners engaged in the practice of forestry as eligible for the same loans, assistance, grants and privileges as are accorded to the producers of other crops that spring from the soil.

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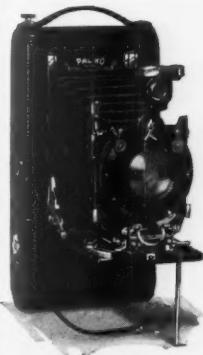
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## Conservation Calendar in Congress

Published monthly while Congress is in session as a service to the members of The American Forestry Association. This calendar contains bills introduced between December 5 and January 3, and those introduced prior to those dates upon which any action has been taken.

### BILLS APPROVED

S. 1863—To authorize and direct the transfer of Widow's Island, Maine, by the Secretary of the Navy to the Secretary of Agriculture for administration as a migratory bird refuge. Approved December 22, 1932.

### APPROPRIATIONS

H. R. 13872—BUCHANAN—Department of Agriculture Appropriation Bill for Fiscal Year, 1934. To Committee on Appropriations December 22. Reported to House December 22. Report No. 1807. Passed House December 30.

H. R. 13710—TAYLOR—Interior Department Appropriation Bill for Fiscal Year, 1934. Reported to House December 15. Report No. 1792. Passed House December 27, 1932.

H. R. 13975—First Deficiency Appropriation Bill. Report No. 1814. Reported to House December 30.

### NATIONAL FORESTS

S. Doc. 145—Report of the National Forest Reservation Commission for the fiscal year ended June 30, 1932. To Committee on Agriculture and Forestry December 6.

H. Res. 305—TAYLOR—Favoring a reduction in grazing fees on lands within national forests. To Committee on Agriculture December 5.

S. J. Res. 219—CAREY and STEIWER—Authorizing the fixing of grazing fees on lands within national forests. To the table December 17. H. J. Res. 517—EATON.

S. J. Res. 221—SCHUYLER—Authorizing the Secretary of Agriculture to suspend, reduce, remit, release, or postpone the payment of grazing fees. To Committee on Agriculture and Forestry, December 21.

S. 4791—ASHURST—Amending the United States mining laws applicable to the city of Prescott municipal watershed in the Prescott National Forest within the State of Arizona. Passed Senate June 8. Reported to House December 20. Report No. 1805.

### NATIONAL PARKS

S. 5233—REED—Providing for the protection of national military parks, National Parks, battlefield sites, National Monuments, and miscellaneous memorials under the control of the War Department. To Committee on Military Affairs, December 19.

H. R. 13849—MC SWAIN—Providing for the protection of national military parks. To the Committee on Military Affairs, December 21.

### PUBLIC DOMAIN

H. R. 13559—FRENCH—To create grazing areas in the Public Domain of the State of Idaho. To Committee on Public Lands, December 12.

H. R. 13745—EVANS—Providing for agricultural entry of lands withdrawn, classified, or reported as containing any of the minerals subject to disposition under the general leasing law. To Committee on Public Lands, December 16.

### REORGANIZATION

H. Doc. No. 493—Message from the President of the United States providing for the grouping, coordination and consolidation of executive and administrative agencies of the Government. To Committee on Expenditures in the Executive Departments, December 9.

H. Res. 317—DIES—Disapproving the establishment of a Division of Public Works in the Department of the Interior. To Committee on Expenditures in Executive Departments, December 12.

H. R. 13458—DIES—To combine several government executive departments including Agriculture and Interior and to abolish the Biological Survey, Bureau of Plant Industry, Geological Survey, Land Office and others. To Committee on Expenditures in the Executive Departments, December 8.

H. R. 13857—EATON—Transferring the Forest Service from the Department of Agriculture to the Department of the Interior. To the Committee on Agriculture, December 21.

H. Res. 332—EATON—Disapproving of the transfer of the General Land Office from the Department of the Interior. To the Committee on Expenditures in the Executive Departments, December 21. S. Res. 313.

H. Res. 334—COCHRAN—Disapproving the Executive orders grouping, coordinating, and consolidating certain executive and administrative agencies of the Government. To Committee on Expenditures in the Executive Departments, December 27.

### WILD LIFE

H. Doc. No. 487—Report of the Migratory Bird Conservation Commission for the fiscal year ended June 30, 1932. To Committee on Agriculture, December 6.

### MISCELLANEOUS

H. Doc. No. 422—Third Annual Report of the Federal Farm Board for the year ending June 30, 1932.

H. R. 13044—PATMAN—To liquidate and re-finance agricultural indebtedness, and to encourage and promote agriculture, commerce, and industry, by establishing an efficient credit system and creating a Board of Agriculture to supervise the same. To Committee on Banking and Currency, December 5.

H. R. 13603—HUDDESTON—Creating a Federal Emergency Relief Commission. To Committee on Labor, December 13.

H. R. 13375—WILLIAMSON—Providing temporary aid to agriculture for the relief of the existing national economic emergency. To Committee on Agriculture, December 7.

H. R. 13376—BROWNING—To create a Federal Farm Loan Corporation. To Committee on Banking and Currency, December 7.

H. R. 13310—NORTON—Amending the Agricultural Marketing Act, approved June 15, 1929. To Committee on Agriculture, December 6.

H. J. Res. 513—BALDRIDGE—Authorizing the Secretary of Agriculture to issue congressional certificate of merit for 4-H achievement. To Committee on Agriculture, December 16.

### Curtis Lights National Christmas Tree at Washington

In the absence of President Hoover, Vice-President Curtis, on December 24, lighted the National Christmas Tree in Sherman Square, Washington, D. C., officially opening the brilliant pageantry of outdoor Christmas trees throughout the country. The Vice-President was introduced by Senator Arthur Capper.

As part of the ceremony Christmas carols were rendered by the George Washington University Glee Club and the Gordon Junior High School Carolers. Music was furnished by the United States Marine Band, under the direction of Captain Taylor Branson.

Mrs. E. K. Peeples, of the Community Center Department of Washington, served as chairman of the Executive Committee in charge of the ceremony, and Ovid Butler, Executive Secretary of The American Forestry Association, served as vice-chairman.

### Forest Service Librarian Dies

Miss Helen E. Stockbridge, librarian of the United States Forest Service, and an employee in the service since its organization, died late in September at Washington, D. C.

A native of Maine, Miss Stockbridge was graduated from George Washington University, where she specialized in library science. She was known to foresters and conversationalists throughout the country and was considered an outstanding authority on bibliography of forestry.

### Association Elects Officers

Members of The American Forestry Association, by letter ballot cast during December, elected the following officers for 1933:

President, George D. Pratt, of New York, re-elected; treasurer, George O. Vass, of Washington, D. C., re-elected. James G. K. McClure, Jr., of North Carolina, president of the Farmers Federation, was elected a director to succeed W. D. Tyler, of Virginia, while Henry Solon Graves, Dean of the Yale Forest School, and William P. Wharton, of Massachusetts, of the National Association of Audubon Societies, were re-elected directors, all for a period of five years.

Two vice-presidents were re-elected, Dr. Wallace W. Atwood, of Massachusetts, president of the National Parks Association, and Mrs. Duncan McDuffie, of California, State Chairman of Conservation, Garden Clubs of America. New vice-presidents, each to serve one year, William J. P. Aberg, Wisconsin, chairman, Executive Board, Izaak Walton League of America; Philip W. Ayres, New Hampshire, Society for Protection of New Hampshire Forests; Daniel Carter Beard, New York, National Scout Commissioner, Boy Scouts of America; Lotus Delta Coffman, president, University of Minnesota; Don B. Colton, Utah, Representative in Congress; George Cornwall, Oregon, editor, *The Timberman*; Samuel T. Dana, Michigan, Dean, School of Forestry and Conservation; J. N. Darling, Iowa, cartoonist and conservationist; L. E. Freudenthal, New Mexico, American Farm Bureau Federation; Walter S. Gifford, president, American Telephone and Telegraph Company; H. S. Gilman, California, Member State Board of Forestry; Dr. Charles H. Herty, Georgia, research chemist; Scott Leavitt, Montana, Representative in Congress; Alexander Legge, Illinois, president, International Harvester Company; Eloise P. Luquer, New York, past Conservation Director, Garden Clubs of America; Mrs. Grace Morrison Poole, Massachusetts, president, General Federation of Women's Clubs; J. C. Sellers, Florida, Jacksonville *Times-Union*; C. E. Sherman, Ohio, Member, State Water Conservation Board; and Frederick C. Walcott, Connecticut, United States Senator.



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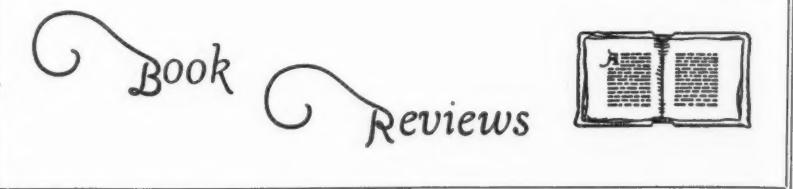
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**NUT GROWING**, by Robert T. Morris. Published by the Macmillan Company, New York, 236 pages—Illustrated. Price, \$2.50.

Describing nut cultivation as permanent agriculture, compared with the transitory agriculture of annual crops produced in rotation, Dr. Morris prophesies that as the 19th century saw a great development in the growth of cereals, so the 20th century will record the emergence of nut culture. He reasons on the basis that nut growing requires less labor and capital to produce a given amount of proteins, oils and starches. He adds that with increased popularity of the nut foods there will be a comparable improvement in general health.

Dr. Morris discusses with rare philosophy and rich experience the preparation of nut tree stock for planting an orchard. He also describes the care of the orchard as it develops to maturity. Special attention is given to grafting, which is the only certain way of reproducing desirable qualities of nut bearing trees. In this section he quotes extensively from the experience of nut growers in various parts of the country. He also discusses hybrids as a means of securing new varieties and to improve desirable qualities in the nuts.

Finally, in the third section are chapters describing each of the more important north temperate nut producing trees and shrubs—namely, the hickories (which include the pecans), walnuts, hazels or filberts, chestnuts, pines, beech, oaks and almond.

*Nut Growing* brings with one volume the gist of existing facts on the growing of nuts under American conditions. It presents the material so authoritatively and attractively that it promises to have a place on the shelves of nut culturists for years to come.—G. H. C.

**THE MODERN NURSERY**, by Alex Laurie and L. C. Chadwick. Published by the Macmillan Company, New York, 494 pages—Illustrated. Price \$5.00.

A splendid guide to plant propagation, culture and handling, gleaned from personal experiences and experimental work of the authors, as well as from actual practices of up-to-date nurserymen throughout the United States. The nursery market is presented, both present and potential, together with sectional distribution of nursery business. Soils, plant values, fertilizers, propagation, grafting and parasites are only a part of the highly instructive and useful information presented. All told, the nursery business is presented from beginning to end, whether it be professional or amateur.

—E. K.

**TWIN GRIZZLIES OF ADMIRALTY ISLAND**, by John M. Holzworth. Published by the J. B. Lippincott Company, Philadelphia. 250 pages—Illustrated. Price \$2.00.

Episodes in the rather adventurous life of two bear cubs from the time of their birth in a cave on Admiralty Island until they become permanent residents in Golden Gate Park in San Francisco, California. A really good bear story.—E. K.

**TAXONOMY OF THE FLOWERING PLANTS**, by Arthur Monrad Johnson. Published by the Century Company, New York. 864 pages—Illustrated with drawings. Price, \$7.50.

This is a discussion of the orderly arrangement of flowering plants, sometimes called systematic botany, in which Dr. Johnson attempts to break away from the orthodox laboratory methods of study and suggest ways of supplementing the dry pressed material of the herbarium with fresh observations gleaned during field excursions. He warns, however, that a field trip can only be saved from being merely a pleasurable jaunt by enthusiastic careful planning of the teacher supported by those principles of classification which can best be studied in the laboratory.

Opening with an informative chapter on the history of botany as a science, and describing its remarkable development during the past half century, the author proceeds to discuss the details of flowers, fruits and vegetative characters such as roots, stems, leaves and buds. These are included in the first 150 pages of the book and supply the nomenclature or foundation of word tools for the more detailed studies under Part II—entitled "Systematics."

In the second or larger portion of the book, the botanical features of each plant family are described, and brief mention is given to the more important species of each genus. Many line drawings serve to illustrate the necessarily technical terminology.

*Taxonomy of Flowering Plants* is primarily a textbook and source of reference for students of botany. It is supplemented with a glossary and voluminous bibliography.—G. H. C.

**PORTRAITS OF NEW ENGLAND BIRDS**. Published by the Department of Agriculture of the Commonwealth of Massachusetts, and sold only by the Secretary of the Commonwealth, Room 118, State House, Boston, Massachusetts. Medium quarto size, 93 color plates, finely printed on heavy, durable paper, bound in gold lettered green cloth. Price \$1.75.

This book might well be called a gallery of the birds of New England, for in leafing its pages one meets striking, life-like reproductions of this interesting avian group, done in beautiful natural color. Over five hundred and sixty figures of birds representing some three hundred and forty-four species are included—all of those usually found in New England and nearby. In many instances the varying plumage due to age, sex or seasonal conditions of a single species are illustrated by several figures. Its complete and authentic nature assures its value as an informative and highly serviceable reference volume. It will be of great aid to students in identification, for while the book carries no descriptive matter, the names of the birds appear under each print and there is also a complete alphabetical index to the plates.

Prepared originally for the monumental three-volume work by the late Edward Howe Forbush, the collection comprises 92 plates in full color by Louis Agassiz Fuertes and Major Allan Brooks. Issued by the Commonwealth of Massachusetts as part of the educational work of the Division of Ornithology, this book is an outstanding contribution to the literature.—L. M. C.

## A MONTH'S WORK FOR TWO MILLION MEN

(Continued from page 76)

men or a month's employment to 1,620,000 of the nation's unemployed in thirty-nine states. Considering the widespread character of the work and distribution of wages in rural communities, it is believed by some that the expenditure would have a circulation value of one and one-half billion dollars.

The Secretary's estimate is confined wholly to National Forests and does not attempt to estimate the employment possibilities of the National Parks, Indian reservations and federal game and bird reservations. These areas aggregate 80,000,000 acres, or about one-half the area of the National Forests, so that if employment possibilities are equal, these latter reservations could give temporary employment to another million men. Neither was an attempt made to evaluate the emergency work which State Forests might provide although it is understood Senator Wagner has asked for this information and that it is now being gathered by the Forest Service.

Secretary Hyde's estimate shows that in the State of California, the National Forests could employ over 26,360 men for a period of one year, which is equivalent to 316,000 men for a period of one month. Other states in which National Forests could be made to relieve unemployment distresses in a substantial way are Arizona, Arkansas, Colorado, Idaho, Michigan, Minnesota, Montana, New Mexico, North Carolina, Oregon, South Dakota, Utah, Washington, West Virginia and Wyoming.

### Lumber Tariff Urged for Philippines

Pointing out that rough logs are being shipped from the Philippine Islands to be sawed into lumber and returned to compete with material produced in saw mills on the Islands, Governor Theodore Roosevelt recently recommended an increase in tariff on lumber entering the Philippines. The Governor accepted, however, cedar shooks and other material used in the manufacture of cigar boxes. He pointed out that no less than 35,000 people work in the saw mills of the Islands. Figuring four or five individuals per family this means that fully 150,000 people are dependent upon the lumber industry. A recent report shows that nearly twenty Philippine saw mills are now closed and the Governor thinks that protection may give them an opportunity to re-open.

### Prison Labor Used in Eradicating Blister Rust in Wisconsin

At the McNaughton State Prison Camp, Oneida County, Wisconsin, a group of twenty prisoners is being used to eradicate blister rust from State lands. These men are a part of a contingent of fifty-four prisoners engaged in reforestation work, the men having already planted one and a quarter million trees near their camp during the spring.

The twenty eradicators work under State guard and under the immediate direction of a State blister rust foreman. These prisoners prefer the eradication work to tree planting and are not difficult for the foreman to manage, although this group has the reputation of being obstinate. They refuse to take any orders from each other, therefore, their own men cannot act as checkers and the State foreman has to work the group as a whole. If prisoners are used at all as checkers they cannot order any men back to get bushes missed but simply check by pulling out bushes as they go.

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## FORESTRY IN CONGRESS

The desire of Congress to reduce all Government costs was clearly shown in the Agricultural Appropriation Bill, H. R. 13872, which passed the House on December 30. Over \$850,000 had been taken from the appropriations to the Forest Service for the current fiscal year. Most of this is absorbed in salary cuts created by legislative furloughs, but forest acquisition and research suffered heavily, and \$45,000 was taken from fire protection and suppression on National Forests. The single increase above current appropriations is for forest planting on National Forests which will be \$214,070 as compared with \$154,200. The increase is for planting over 30,000,000 trees now in the nurseries which must be lost or destroyed if not set out during the coming year.

The Committee on Appropriations has established a definite policy against further land purchases. Only \$85,854 is included to liquidate existing contracts for forest purchases. Similarly, only \$89,525 is allotted the Biological Survey for completing land purchases now under contract for the Migratory Bird Conservation Act.

Forest research is reduced by nearly \$132,000, with the Forest Products Laboratory suffering the heaviest cut from \$613,640 to \$566,791. Investigations in forest management are cut by over \$40,000 to \$492,671, while range investigations are reduced from \$123,030 to \$100,000. The cooperative forest survey now stands at \$160,067—a reduction of over \$10,000 below the current appropriation, which will permit continuing the survey in California, the Lake States, the northern Rocky Mountain region, the Pacific Northwest and the South without expansion.

Forest protection in cooperation with the states as authorized by the Clarke-McNary Act is again reduced from \$1,611,580 to \$1,587,513—a reduction of \$24,067. This affects work in thirty-seven states and one territory each of which contributed over \$3.60 for every dollar from federal sources during the past year.

No material cut was made in appropriations for controlling white pine blister rust in the national forests of Idaho and the Inland Empire, and the investigation and cooperative control work under the office of Blister Rust Control was reduced from \$400,000 to \$375,233.

Appropriations for maintaining the barrier zone from Long Island to the Canadian border against the westward escape of gypsy and brown tail moths was increased to \$408,388 from the current appropriation of \$400,000.

The Biological Survey cut of \$400,000 below the current year is largely taken from the administration of the migratory bird conservation act. Funds for controlling predatory animals are reduced from \$573,780 to \$530,000,

and research activities have nearly \$55,000 taken away.

One million dollars for fighting forest fires during the current fiscal year is included in the First Deficiency Appropriation bill as reported to the House on December 30. This includes \$882,000 actually spent for fighting 6,818 fires which burned 417,000 acres on the National Forests since July 1, 1932. The reserve of \$118,000 is believed sufficient to meet any emergencies during the remainder of the year. During the previous year an appropriation of \$4,260,000 was necessary to meet similar responsibilities.

Congressional action designed to keep down the fees charged by the Forest Service for grazing livestock on the National Forests is sought by resolutions introduced in Congress last month by Congressmen Taylor and Eaton of Colorado in the House, and Senators Carey, Steiwer and Schuyler in the Senate. The resolutions are in the nature of congressional requests to the Secretary of Agriculture to fix the charge for the grazing of cattle and sheep on National Forests during 1933 at not more than fifty per cent of the rates charged during the year 1931.

The effect of the resolutions, if passed, will be to continue the reduced grazing fees which Secretary Hyde granted grazers during the year 1932, upon the insistent plea of the grazing interests and after the Secretary had on two previous occasions disapproved reductions requested. In finally granting the grazers a concession of fifty per cent in established fees the Secretary made clear that the reduction was approved as an emergency relief to the grazers, and that the rates previously in effect would be restored for the season of 1933.

At the office of The American Forestry Association the congressional resolutions are looked upon as an effort to forestall the Secretary in restoring what he has declared are fair and reasonable rates for the grazing privilege. The fixing of grazing fees, the Association points out, is an administrative matter and action by Congress virtually dictating the fees from year to year would be a precedent that might lead to complete demoralization of forest administration. Major R. Y. Stuart, testifying last November before the House Sub-Committee on Agricultural Appropriations declared there is no justification for the use of forage on the National Forests at less than the reasonable price it commands on private lands of comparable value. A fifty per cent reduction in the established grazing rates, he said, returns less than the cost of administration, and will mean a revenue loss to the Federal Government in 1933 of approximately \$650,000 and to the states and counties in which the National Forests are located of approximately \$350,000. This latter loss is explained by the percentage of National Forest receipts which are returned to the states and counties for support of local schools and roads. Reports coming to the Association this past year indicate that school systems in sections of the west have been seriously embarrassed by the loss of receipts due to concessions granted grazers this year.

President Hoover's reorganization plan has been the subject of much discussion in and out of Congress. Comment for the most part has been critical. Numerous Senators and Congressmen criticize it either on the grounds that it is not a real reorganization plan or that its savings are not apparent. No official action has been taken by either branch of Congress, and the general sentiment prevails that the plan will be disapproved before the expira-

tion of the sixty-day period, thereby carrying over the whole plan of reorganization to the new administration. This view is given color by the testimony of Colonel J. Clawson Roop, Director of the Bureau of the Budget, who was questioned upon the plan by the House Committee on Expenditures in the Executive Departments on December 14. Replying to a question from the Chairman of the Committee as to whether he did not think it advisable to postpone reorganization until the new President takes office, Colonel Roop replied, "Personally, I think it would be advisable."

Under date of December 16, the Special Committee of the Senate on the Conservation of Wild Life Resources, consisting of Senators Walcott, Hawes, Pittman, McNary and Norbeck, issued a call for hearings before that committee on January 12, 13 and 14 to consider reorganization of the conservation activities of the Federal Government. The announcement states that the committee desires to have the views of conservation organizations on this question.

Congressman Colton's bill, to provide grazing administration for the Public Domain, came up on the Consent Calendar on December 19, but was blocked by Representatives Stafford, of Wisconsin and LaGuardia, of New York. The latter declared that the bill "ought to be knocked off the calendar because it reverses our tradition and policy with regard to public lands. There is grave danger in this bill. You may put off the public lands every small raiser of cattle and sheep and give monopolies to the big companies and permit them to put up buildings and fences that their successors must pay for." Congressman Leavitt's rejoinder that the bill would work "in just the opposite way," was unavailing, and the bill was passed over without prejudice.

On December 27 the Department of the Interior Appropriation Bill passed the House with nearly \$24,000,000 taken from the Department's current appropriation. In this paring the National Park Service suffered a reduction in funds of almost fifty per cent, its item being reduced from \$10,640,620 to \$5,051,850. Most of the reduction affects roads and if the bill is passed in its present amount nearly all road work in the National Parks will be stopped at the close of the present fiscal year and no money will be available for extraordinary maintenance following completion of the roads. Funds for the administration and protection of some of the parks will be so reduced that in such cases as the Lassen National Park in California, there will be inadequate resources for fire protection.

Funds for the administration and protection of the Indian forests were cut \$23,570 to a present total of \$386,430. No reductions were made in suppression of forest fires, but insect control work on the Klamath Indian Reservation in Oregon was reduced to \$10,000.

On December 19, the House Consent Calendar carried five bills authorizing land exchanges in the Chelan, Boise, Colville, and Gunnison National Forests, and in several National Forests in Oregon were passed over. Anticipating that these bills would come before the House, Representative Leavitt of Montana presented an extended statement on December 16 setting forth the history and accomplishments of the present Land Exchange Act under which the Forest Service is operating.

The objections to the bills arose from confusion with the old Land Exchange Act of 1897, which resulted in serious losses to the Federal Government and was repealed in 1903. The present authorization, Mr. Leavitt pointed out, is the result of the Forest Exchange Act of 1922. This is totally different from the one of 1897, in that exchanges are based on comparable values, and entire authority is placed with the Secretaries of Agriculture and Interior.

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## Ask the Forester?

Forestry Questions Submitted to The American Forestry Association, 1727 K St., N. W., Washington, D. C., Will be Answered in this Column. A Self-Addressed Stamped Envelope Accompanying Your Letter will Assure a Reply.



**QUESTION:** I have a canvas canoe from which I am removing the paint. I am using paint remover. It softens the old paint, allowing it to be scraped off with a putty knife. Can you tell me the best paint or varnish to be used on a canvas canoe? The material is ten-ounce duck. Can you tell me the best waterproof glue for use in patching a hole in the canvas?—J. P. P., Massachusetts.

**ANSWER:** The reader was referred to Wake- lin McNeel's article in *AMERICAN FORESTS* for September, 1932, beginning on page 509, where he tells of a canoe trip and the material that he carries with which to patch and repair damages en route. After using the paint re- mover, wash the canoe thoroughly to take away all traces of the remover. Then use the best grade of automobile or canoe enamel. Boat men in Washington recommend Smith's Bakelite as the best varnish for boats or other exposed surfaces. The Old Town Canoe people recommend Ambroid cement for all patching, or any work where glue is needed.

destroyed by late spring frosts. Furthermore, it is subject to the filbert blight, a fungous disease common to the native hazel. European varieties which may prove successful in protected sites include Barcelona, DuChilly, Wywyler, Italian Red and White Aveline. A bulletin on filbert growing has been prepared by the New York State Agricultural Experiment Station at Geneva, New York.

**QUESTION:** Will black walnut grow in Colorado? A. W. H., District of Columbia.

**ANSWER:** W. J. Morrill, Colorado State For- ester, reports that walnuts from northern sources such as Ontario and South Dakota have grown successfully and produced hardy trees. Black walnuts from middle western sources should grow successfully. Seedlings grown from Alabama and Virginia nuts, as from other southern sources, cannot withstand Colorado winters.

**QUESTION:** Is it true that severe droughts of different years have been found recorded in the rings of growth of trees in the West? H. B., New York.

**ANSWER:** While growth rings may not definitely record droughts in a comparatively hu- mid climate, in the southwestern regions the situation is so simplified that growth rings form a definite record such as can be checked in various parts of the same region. Dr. A. E. Douglass, of the University of Arizona, has been studying the growth rings of Ponderosa pine in Arizona and New Mexico, and Sequoia in southern California for thirty years. He says, in the annual report of the Smithsonian Institution for 1931, "This is especially likely in a cool, dry climate like that of northern Arizona, where moisture is vital to all vegetation and where winter gives annually an emphatic resting period in the life of each tree." The most satisfactory records are shown on the forest border which separates successful forest growth from the desert, where "as one goes near the center of the forest the rings become less sensitive; that is, more complacent or equal in growth."

**ANSWER:** There is probably no better way of holding the color from darkening than by coating with hot linseed oil.

**QUESTION:** Is it all right to cut logs for a cabin any time, or only during the winter? I intend peeling the logs.—W. L. Z., Illinois.

**ANSWER:** The trees can be cut any time of the year, but they will probably hold their color best if cut during the fall or winter and placed immediately under shelter. The bark should be peeled before the logs begin to dry.

**QUESTION:** On some trees set out along a highway in southern Michigan, I noticed that the small trunks were covered with a waxy substance. What is it? Is it to keep out borers? Will such a coating also prevent sun scald on trees removed from shady places and set in the open? J. W. A., Indiana.

**ANSWER:** The waxy material was probably paraffin which had been painted or sprayed on to prevent the trees from losing moisture too rapidly. Probably these trees had recently been transplanted. The wax coating permits the tree roots to establish themselves without supplying an unusual amount of water to upper parts. Such a coating may help prevent sun scald, but has no effect upon the borers.

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## Government Reorganization Meets Opposition

The present law permitting the reorganization of government departments is "merely make-believe," unless Congress approves his recommendations, President Hoover declared in a statement issued on January 3. He said the same opposition has now arisen which has defeated every effort at reorganizing the executive departments for the past twenty-five years.

"Either Congress must keep its hands off now," continued the President, "or they must give to my successor much larger powers of independent action than given to any President if there is ever to be reorganization. And that authority, to be effective, should be free of the limitations in the law passed last year which gives Congress the veto power, which prevents the abolition of functions, which prevents the rearrangement of major departments."

Referring to his message of December 9, 1932, in which he established a Division of Land Utilization in the Department of Agriculture to include the Forest Service, the General Land Office, the Biological Survey, and others, and also a Division of Education, Health and Recreation in the Department of the Interior to include the National Park Service, the Bureau of Indian Affairs and others, the President said, "No other government and no good government would tolerate merchant marine activities separated over seven departments or independent establishments. The same can be said as to public health, education, land utilization, etc."

Representative John J. Cochran of Missouri, Chairman of the House Committee on Expenditures in the Executive Departments, who has introduced H. Res. 334, disapproving the President's executive orders, stated that he feels "it is unjust and most unfair to the incoming President to practically revolutionize the administration of fifty-eight activities two weeks before he assumes command of the Government."

"My reasons," continued Mr. Cochran, "for desiring to nullify the executive orders are: First, because a new President is about to assume control; second, because some of the President's suggestions are not sound, and he has gone beyond the power vested in him; and, third, because he has not pointed out specifically where the economy will result, but merely a rearrangement of present activities."

With special reference to those portions of the President's plan which would affect the Public Domain, Chairman Cochran said, "I cannot agree with the President that the General Land Office should be placed under the Department of Agriculture. It should stay along side of the Geological Survey."

"The President seems to feel that the utilization of the Public Domain for agricultural purposes is more important than the adjudication of applications for oil, and mineral permits. I do not," said Mr. Cochran. "The utilization of the Public Domain for grazing purposes does not in my opinion compare with other activities of the General Land Office."

## WHAT TWIG IS THIS?

(Continuing from page 79)

horse-chestnut buds are large and sticky, while the twigs are stout. The maples have smaller buds, not at all sticky, with four or more scales showing. The twigs are not stout.

The buds of the following trees alternate on the twig or are found singly: Locust, the buds are hidden in the stem. There is no terminal bud. Twigs are slender, often thorny. In the sumac the buds are partly hidden and covered with hair. The twigs are stout and the pith brown.

Of the buds with scales there is a long list. With one or two scales showing are the sycamore, with its conical buds, and the leaf scar encircling the buds; the willow with its pointed buds; the tulip tree with its flattened buds; the basswood, usually three scales, with buds nearly equal; and the hickory, with its terminal bud larger than the others.

Buds with two or more scales include the ailanthus, the stout twigs of which have no terminal bud, while the leaf scar is large, half around the bud; the hackberry and elm, with buds strictly alternate, two rows on the twig, ovate and pointed, the hackberry with the bud pressed against the stem, the elm away from the stem; and the basswood with the buds plump and red, in two-five arrangement, rather than in rows. Scales may be found on two or three buds. The twigs are angling. The birch has numerous scales with three bundle scars, while the chestnut has more than three.

The following trees have three or more scales showing on their buds: The oaks, usually with one or more buds at the end of twig; the walnut, with brown buds, downy twigs, and chambered brown pith; the butternut with gray or brown buds, smooth twigs and chambered brown pith; the bitternut, with yellow buds. With the exception of the oaks, all of these buds are lobed at the tip. The buds of the beech are slender and sharp, not lobed at the tip, but stipule scars occur half around the stem; the stipule scars of the poplars do not

reach quite half around the stem, which like the buds, are stout, while the same must be said about the black cherry, the bark of which has a wintergreen flavor. Without stipule scars, as are the walnut and butternut, are sour gum, with its pith cross partitioned and chambers stuffed; the sassafras, its pith not cross partitioned, but with one bundle scar and green twigs; poison sumac, with five or more bundle scars and mottled twig; sweet gum, with less than five bundle scars, in circle, and with leaf scar semi-circular; and apple, with leaf scar crescent and bundle scar in line.

Dallas Lore Sharp writes that when a boy at school the teacher one day was reading to the science class about the mistletoe and its parasitic habits, when by a very fortunate twist of circumstance she challenged the boy to find some and be the first in the class to do so. He went forth in the spirit of Columbus to find what no one he knew had ever found; to bring back what no one had ever brought to his world. He writes that day marks one of the great moments in his education. He later became a great naturalist and educator.

What event, discovery, adventure, or experience of any kind that has a close relation to the outdoors has ever come to you to thrill you with the pride of discovery and achievement? Every youth with curiosity and energy is "rediscovering the mistletoe." We want to get these stories and pass them on to our readers. As an inducement six dollars is offered for the story adjudged best from standpoints of interest and method of presentation, four dollars for the second; two dollars for the third, and a newly written book on the outdoors to any author who writes in a manner worthy of honorary mention. Four stipulations govern the contest: the story must be a true outdoor story, no longer than 400 words, must be submitted in typewritten form, and sent to the editor of this page not later than April 10. The prize stories will be published.

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## TREE EMIGRANTS

(Continued from page 66)

States Forest Service. A "prophet without honor or except in his own country," Monterey pine emerges like a Joseph in a far land to an eminently honored position. It is very probable that larger areas of Monterey pine forest exist today in Australia than in California, its original home, and if the extensive New Zealand plantations be taken into consideration, this is almost certainly so.

Australasia's great need is for reforestation and afforestation. Compared to its total land area, Australia has the smallest proportion of forest of any of the great divisions of earth, less than five per cent. The eucalypts furnish an abundance of hardwood, but there are scarcely any softwoods. Such as exist grow slowly, and dependence must be placed on exotic conifers. Australia, New Zealand, Tasmania, and South Africa are all faced with the necessity of husbanding their present limited forest areas while replanting extensively with foreign trees.

The story of Monterey pine is probably the most amazing in the history of forest exotics, even more so than the importation of Douglas fir and Sitka spruce to Europe, because of its unexpected and unheralded development.

Several trees of very restricted range in the United States, all of them from the West Coast, are proving of great value to forestry in the Antipodes. Among these are the Monterey cypress, having the same range as *Pinus insignis*. Although it does not thrive everywhere in Australia, it succeeds throughout a greater area than any other exotic. The sequoias, which also have a limited range, have been found most successful in parts of these southern lands. Redwood is considered second only to *insignis* for introduction in parts of the Antipodes. Near Melbourne ponderosa pine is next to Monterey pine in value. Torrey pine, which seems to be dying out as a species in California, grows larger in New Zealand than at home. Slash pine, a native of southern United States, has been tried with success in South Africa, showing great vigor in Zululand.

Eastern red cedar or juniper is found to thrive in parts of India, as does the swamp cypress and loblolly pine.

Black walnut, box elder, black locust, white ash, jack pine, and pitch pine are hardy and successful in Manchuria.

Red cedar, although occurring in southern Canada, has been introduced from a more adaptable climatic zone in the United States, and becomes hardy in a few seasons in Manitoba and the Northwest Territory of Canada.

Douglas fir and other trees from the State of Washington have been used successfully in the forestation program of Alaska.

The mesquite tree of our Southwestern deserts was distributed in central Queensland, Australia, in 1902, and is valuable as an orna-

ment, shade tree, honey plant, and is a good forage tree, the bean pods being eaten by natives and livestock. The pods and bark are rich in tannin. The lumber is hard and durable, resembling *lignum vitae*, and taking as rich a polish as mahogany. The eastern honey locust has attracted attention in Queensland as a forage crop.

The mesquite tree is the most common and valuable tree ever introduced into the Hawaiian Islands. Monterey cypress and Lawson's cypress have done well in Hawaiian reforestation, and a plantation of sequoias made in 1925 was making good progress at the latest report.

Foreign interest in American trees is indicated by the following request received by the United States Department of Commerce late in December, 1931, from the Kiao-Tsi Railway, Tsingtao, China:

"I have the honor to state that I have been requested by Mr. Ko Kuang-ting, the Chairman of the Board of Management of the Kiao-Tsi Railway, to assist in securing a quantity of evergreens for the Railway. Mr. Ko stated that he desired a tree that would beautify the landscape, act as a windbreak and ultimately develop into timber useful for telegraph poles and so forth. He said that he had heard of an American tree which retained its leaves during the winter months, but these leaves turned red or russet, and stated that he wished to have more information regarding this tree particularly, but also desired to secure ordinary evergreen seeds or seedlings."

It was thought that the tree referred to was either scarlet oak, red oak, or pin oak.

Fruit tree stocks are sent to Canada, China, Siam, and South Africa. American citrus trees have been sent to South America.

As competent careful observers amass more and more reliable information on the world's trees and the conditions they require if they are to thrive, many a silvicultural failure among the myriad fiascos of the few centuries past will be turned to success. Gradually, the rich forest flora of America will spread to still other places on the globe, as man learns and practices all the methods necessary to success in growing potentially valuable foreign trees.

The long task of turning plants of the world to their maximum benefit to mankind, already well begun with the shorter-lived food plants, will develop and unfold until, in the course of fewer centuries than it took man to make maximum use of domesticated animals, the plant resources of the planet will confer their greatest benefactions on the human race.

And America, by reason of geologic forces which caused its mountain ranges to extend in a north-and-south direction, thus opening rather than closing the avenues of post-glacial plant growth, will probably do more for reforestation of the globe than any other major area of the earth's surface.

## FORESTRY IN THE SOUTHWEST

(Continued from page 71)

and disposal of slash, or the limbs cut from felled trees, are carried out with proper regard for silviculture. Under good silvicultural practice, all thrifty immature trees and such mature trees as are needed for seed or cover are spared from the ax, unnecessary damage to advance reproduction is avoided, and slash is scattered on sites subject to severe erosion. It is when logging is improperly executed and accompanied by overgrazing or fire that serious soil erosion takes place. In the normal virgin forest the soil is completely covered by leaf litter and reproduction, supplemented by herbaceous vegetation. After conservative cut-

ting this condition is soon restored under proper protection.

About half of the seven million acres of timberland in Arizona and New Mexico will for many years, on account of remote location or rough topography, be classed as unmarketable. Such areas are valuable for grazing, watershed protection and recreation, and for this reason play an important role in the management of the National Forests. But, by and large, the forests of the Southwest are not primarily grazing lands, or cover forests, or recreational forests. They are timber forests capable of growing commercial timber crops adequate to meet the future needs of a rapidly growing empire.

## Prisoners in the Forest

(Continued from page 68)

thing; a swift, furious application to the job in hand, then a sudden and alert watching and peering about.

"Them two 'froggies' is on the run, Captain," Boynton whispered.

We watched while they finished their scrubbing, then after another interval of looking and listening they noiselessly entered the water and swam about. I had a good look at their faces and found them young, in fact if it had not been for their stubby beards they might have been handsome. They floated at times, resting on their backs, probably for listening purposes; at other times they talked. Once they came within earshot.

"What are they saying?" Boynton asked. I did not answer at once, for I had suddenly discovered that their conversation was carried on in German and I understood every word. I put a cautioning finger against my lips, whispering, "Escaped prisoners! Heinies!"

I had heard of many attempts among the German prisoners in France to escape and make their way back to the Fatherland. They rarely succeeded. The French assembled these recaptured prisoners into special units, known as *prisonniers de guerre disciplines*, and they were given extra duties by way of punishment and were always subject to stern discipline. But American engineer officers who had work to do rather liked these disciplinary companies. They worked well.

Here were two of them swimming right under our noses, and our duty was to recapture them for the French authorities. But they were not always caught without a struggle and we wondered if two patients could handle them.

Boynton was the first to act. By whispers and signs he indicated that he would work his way through the woods to where their clothing was piled on the other side of the pond. He had not been a deer stalker for naught, and easily succeeded. Immediately I jumped into the water, calling to the Germans in their own tongue. They hesitated, then started to swim away in the direction of their clothing, but the appearance of a soldier in uniform, or at least part of a uniform, for Boynton had put on his army coat, discouraged them. The two turned back in my direction.

Uncertain as to whether they meant to surrender or give battle, I talked pleasantly and reassuringly. One of the Germans suddenly grinned and hailed me as a comrade.

"Swiss?" he asked, but he already knew it.

They started talking to me then, quite reassured. The soldier on guard over their pile of clothing must be a *soldat* of the *Legion étrangère*, they thought, because of the color of his uniform coat. As for me, they seemed to frankly accept me as another soldier of the Legion. Later on, however, their leader told me that this was a ruse, and that they had planned to catch me off guard, push me below the surface of the lake and hold me there.

I talked soothingly, and brought them around to consider surrender rather than fight. They even told me of their escape, of their crawling through three separate wire entanglements, of pursuit by soldiers, *gendarmes* and civilians, and I could not help but have a certain admiration for their courage.

After awhile I sent them away to dress, giving Boynton instructions in slang, which was the accepted method of communication if one suspected an enemy of understanding English. They seemed a little puzzled by my use of the English tongue.

When they returned, dressed in rags, with Boynton and his bare legs behind them at a proper distance, they were thunderstruck to see me step from behind a tree wearing the uniform of an American officer. They snapped into salute and held it until it was returned,

after which I demanded their *parole*. This was readily promised, pledging themselves to make no effort towards escape.

When Boynton was fully dressed we marched them ahead of us toward the valley. I was a little uncertain as to where they should be turned in, whether we should take them to American headquarters or hand them over to the French. There as a standing reward for the capture of escaped prisoners and perhaps some needy French lieutenant would be glad to get it.

As we walked along one of the prisoners, the more intelligent of the pair, asked if we had anything with us in the way of food. He and his companion had not eaten since the night previous, it appeared. There was nothing left of our lunches, but I suggested that we might stop at the hut of the *charbonnier* if they did not mind the surroundings and the dirt.

Just before we reached the burner the prisoner told us of his hasty marriage when the drums and bugles called to war, and of his child now two years that he had never seen. Did I blame him for attempting to escape? I did not, I told him; any real man would do that and I was seized with another idea.

The *charbonnier* overdid his protests. He would not feed Germans, not even if I paid him well for it! But I had seen him exchange glances with the prisoners, glances that convinced me he had seen them before. Also, I had heard stories of charcoal burners helping escaping prisoners. Also, there were rumors of an underground railroad, and the huts of *charbonniers* were believed to be "stations" along that route. While the Germans were devouring the food which the wood burner finally served at our demand, I talked with Boynton, feeling him out.

"Boynton," I said meaningfully, "we are just a couple of patients out of a hospital. Why should we take prisoners?"

That woodsman winked at me, wickedly. "I been wondering if you would think of that, and when."

So we went away from there, and that was the last we saw of the Germans—as our prisoners. But there is a sequel to this story.

Some weeks later I had returned to duty and in line with my work had managed to borrow a company of the *prisonniers de guerre disciplines* from a grudging French officer. When they came marching on the job, the sergeant in command drew up in front of me.

"Zu Befehl, Herr Hauptmann," he said, and waited for me to return the salute. But I was mad all the way through. The nerve of the fellow! Just because I had a German sounding name was no reason for him to presume and speak to me in his own tongue. Then I looked at him, and my face turned red. I had not expected to see him again!

"Kein Wort, Herr Hauptmann," he assured, and I understood. He meant that no one knew of the serious breach of conduct I had been guilty of when I let him slip through my fingers.

As the work progressed I saw quite a little of the fellow and talked with him at times—another breach of discipline. He told me that both he and his companion had been recaptured shortly after our meeting and that the charcoal burner had been arrested and had received a stiff sentence for his share in the affair. But no one, not even the *charbonnier* had revealed the part we played.

I told the sequel to Boynton. His lungs had gotten worse and he was confined to bed. Apparently he had not long to live. He sat up and spoke quite vehemently.

"To hell with war! Say, Captain, some day you tell the world!"

Well, I am telling it.

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**Index to  
ADVERTISERS**

**FEBRUARY, 1933**

	PAGE
American Forestry Company	95
American Telephone & Telegraph Co.	2nd Cover
Belcher, H. D.	95
Bird-Lore Magazine	86
Cannon Company, The	93
Central Maine Forest Nursery	91
Colton Manor	88
Coolidge, P. T.	95
Elfgren Nurseries	91
Fechheimer Bros. Company, The	93
Filson Company, C. C.	83
Franklin Forestry Company	91
Herbst Brothers, Inc.	87
Hill Nursery Company, D.	90
Hobson, H. D.	95
Idaho School of Forestry	92
Jones Nurseries, J. F.	91
Keene Forestry Associates	91
Kelsey Nursery Service, F. W.	87
Kelsey Nursery Service, F. W.	91
Long Bell Lumber Company	90
Maine University Forest School	93
Mears, A. H. G.	86
Morris Nursery Company, The	90
Naperville Nurseries	91
N. Y. State College of Forestry	92
Northern Pacific Railway Company	4th Cover
Pal Ko, Inc.	85
Peacock, J. D.	95
Ranson Nursery Company	95
Rue, C. H.	95
Smith & Co., D. B.	89
Stoeger, Inc., A. F.	93
Storrs & Harrison Co.	91
Western Maine Forest Nursery	87
Wisconsin Aquatic Nurseries	95

**The Wooded Way to Mount Vernon**

(Continued from page 58)

planted at the Virginia entrance to the National Capital in conformity with the detailed plans prepared for the highway, while the War Mothers of Alexandria set out three Oriental plane trees at the northern entrance to that city. Thirteen native Virginia cedars from Ferry Farm, the boyhood home of Washington, were planted at the Mount Vernon terminus by the National Society of the Daughters of the American Revolution. The same organization, through its local chapters, set out eight honey locusts, in memory of the eight presidents from Virginia, of which Washington was the first, along the road at Belle Haven, and two Oriental plane trees at the overlook at the Dyke waterfront. The United Daughters of the Confederacy planted a memorial red oak at Collingwood. The National Society of Colonial Dames set out two large willow oaks at the "Capital Overlook" between Washington and Alexandria.

Although the fifteen and one-half miles of highway is in itself a complete project, it represents in finished actuality about one-fourth of the proposed George Washington Memorial Parkway which would extend from Mount Vernon to Great Falls on the Virginia side, cross the Potomac by way of a memorial bridge, and return to the Capital City on the Maryland side by way of Fort Washington.

Thus some day visitors to Washington will be able to motor for hours over the most beautifully planned highway in the world—a highway where woodlands and the beauty resulting from them are conserved and maintained by simple, but carefully planned and executed, landscape forestry practices.

But of this ultimate parkway, no section will score greater achievement in landscape restoration and moulding than the fifteen and one-half miles from Washington to Mount Vernon. For there is the cradle of some of the most cherished and dramatic history of America; there is the seat of natural beauty in all its time-mellowed glory. Further, there is the laboratory in which was mixed the formula for the beautification of future areas.

And in its ultimate—when authorization and funds are available—there will grow one of the most distinct recreational areas on earth. At Gravelly Point, if present plans are successful, there will arise an airport of unusual character. To the south, Fourmile Run will be transformed into a lake for seaplanes. Still farther south will be modeled a golf course for the benefit and enjoyment of the public. And on a little hill to the west, overlooking it all, visitors may watch activities from "Abingdon," site of the old Custis home. Beyond Alexandria there will be woodland trails, both foot and bridle, for those who seek a closer comradeship with nature. Midway between Alexandria and Wellington, existing flat marsh lands, hundreds of acres in extent, will afford an opportunity to study native plant and animal life. As a bird sanctuary and biological station, this large area will be preserved as the natural environment that Washington himself knew and enjoyed.

But as all of this beauty takes form, there remains one unfinished job—the proper landscaping and utilization of the memorial circle at the north entrance to Alexandria.

"The circle was originally intended for the monument to the Confederate soldier in the center of Washington Street in Alexandria," said Mr. Simonson, "but late developments have caused us to abandon its removal. It is just as well, for the circle, in my estimation, has but one purpose, to hold a memorial to Major Pierre Charles L'Enfant, the brilliant French engineer and friend of George Washington who planned the Capital City. Any

**WHO'S WHO**

**Among the Authors in This Issue**

WINFIELD SCOTT (*California's Unemployment Forest Camps*) is manager of the Butano Forest State Park Association, with headquarters at Menlo Park, California.

DAREL McCONKEY (*Tree Emigrants*) was formerly assistant extension editor for the West Virginia University Agricultural Extension Service. He is now in Washington, D. C., devoting his time to writing magazine and newspaper articles, a number of which have appeared in AMERICAN FORESTS. He attended both Davis and Elkins College and West Virginia University.

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ERNEST GONZENBACH  
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project of landscape development to the memory of Washington is incomplete without it, for L'Enfant was greatest in his landscape planning, as the parks, wide tree-bordered avenues and spacious grounds of the Federal City will testify.

"And any memorial erected to him must hold this type of beauty—perhaps a great fountain, symbolically designed, appropriately landscaped. A beautiful grove of trees should arise on both the east and west sides of the circle as a further testimonial."

No greater honor could be given the young Frenchman—for there is no greater monument to a tree lover than a tree.

